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To Advertisers: Advertising-rates on application. Forms close on the 5th of the preceding month.

Published Monthly, on the 20th, by Wilfred A. French, 383 Boylston Street, Boston, Mass., U. S. A.

Entered as Second-Class Matter at the Post-Office, Boston, under the act of March 3, 1879.

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Yearly Subscription-Rates: United States and Mexico, $1.50 postpaid; single copy, 15 cents. Canadian subscription, $1.85 postpaid; single copy, 20 cents. Foreign subscription, $2.25 postpaid; single copy, 1 shilling.

Agents for Great Britain, Houghtons, Ltd., 88-89 High Holborn, London, W.C., England, with whom subscriptions may be placed.

Photo-Era, The American Journal of Photography

WILFRED A. FRENCH, Ph.D., Editor and Publisher

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383 Boylston Street, Boston, Mass., U. S. A. **Cable Address, "Photoera"**

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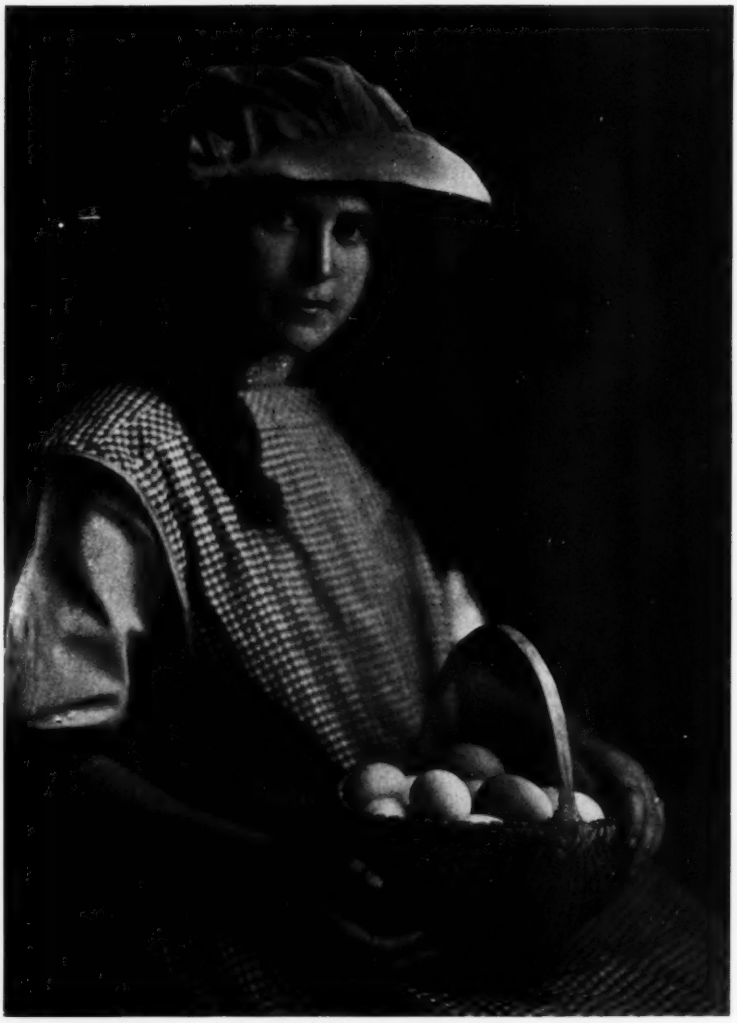

A RURAL MAID
L. L. HIGGASON

PHOTO-ERA

The American Journal of Photography

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Vol. XXXVI **MAY, 1916** **No. 5**

Sunshine-Effects

WILLIAM S. DAVIS

HOW often have we found that the charm of some scene which attracted us at a particular time was due to the fleeting effect of sunshine and shadow, this fact being driven home perhaps by the change encountered upon visiting the spot again under other conditions. After a few such experiences every worker aspiring to the production of pictorial results begins to realize more fully the important part played by lighting and atmospheric changes upon everything outdoors, and consequently the need of watching more closely their influence upon chosen compositions.

While a great many scenes are found at their best when direct sunlight is absent, a large number are literally created, so far as pictorial interest is concerned, by the pattern of sunshine and shadow cast on bright days, the charm sometimes centering entirely in those passing effects rather than the permanent details included. Indeed, so quickly do the shadows move and change their shape that a subject is often seen at its best for only a few minutes.

When considering the interpretation of sunshine by photography one must learn to select the effects which come within the scope of monochromatic rendering, otherwise it will be found that many photographs of particularly enchanting effects of great brilliancy to the eyes prove deeply disappointing in their failure to register, even approximately, the impression produced upon the spectator. Here is where one runs up against not only the incorrect translation of colors by the photographic plate, unless assisted by corrective filters, but the difference between *color-contrasts* and those due to *tonal gradation* — in other words, the attractive element is often largely a matter of color-combinations, and unless these are sufficiently different in relative tone-values to permit of retaining something of the comparative intensity seen by the eyes success cannot be expected; hence the value of forming the habit of comparing the relative *tone* of one color with another when looking at a subject.

To make my meaning clearer, it is not unusual in nature to meet with widely differing colors, even those complementary to one another, which upon comparison prove to be of nearly or quite the same tone-value; as, for instance, a landscape with yellow-green foliage in full sunlight, bright red flowers in the immediate foreground, and a background formed by a distinct hillside violet-gray in tint. Now in a case like this it is quite possible for all three colors mentioned to be of nearly equal tone in the broad masses, although the eye would immediately be attracted by the brilliant red flowers and sunlit foliage, the impression being that these were brighter in tone than the distance; but if a photograph were made under such conditions, taking care to use plates and filters that would give a spectroscopically true rendering in monochrome, it is apparent that all must necessarily reproduce alike; while in the average snapshot, taken without a thought of color-correction, the light green and bright red would be shown a number of degrees darker than the violet-gray hillside. Of course the result in either case would fail utterly to give any adequate idea of the impression made upon the eyes by the warm colors.

The question may well be asked — how then can one convey the feeling of sunny warmth and brilliancy without the aid of color in a picture? The answer is, by selecting views which contain a suitable distribution of light and shadow, characteristic of sunshine, independent of any color-combination.

Naturally the photographer's choice of subjects in this field is more limited than is possible for the painter, with sufficient knowledge of the psychological effect of color to make use of, but this cannot be helped, and a successful worker in any medium is the one who respects the limitations of that medium.

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Since strong sunlight falling upon a subject either from one side or toward the observer produces brilliant snappy highlights and distinctly defined shadows, the gradation of which are much flatter in tone than the light passages, this fact gives us some clue to the combination which best conveys the effect of intense light. A point to be thought of in this connection, however, is that the longest scale of tone available on paper from white to black is very much less than the contrasts in the natural scene one may be trying to photograph. Consequently, as our rendering can be only a relative one within the limitation of the scale mentioned, it is necessary to use with care the highest light possible (white paper) if an effect of extreme brightness is required, for the only result of repeating or spreading any light tone over a larger area of the picture is to weaken its intensity; so if the lighter tones are thus allowed to occupy too much relative space one has nothing left in reserve by which to introduce the needed emphasis. The foregoing simply indicates that the maximum effect of strong light is secured by arranging the composition with a view to include just enough extreme highlights to give snap and power in tonal gradation, while the remainder of the picture-space is filled with middle and lower tones of sufficient depth to give the contrast. Marine views taken against the light during morning or afternoon hours, and landscapes with a dark sky-line in contrast to a glowing sunset-sky, are typical examples where extreme concentration of the highest lights naturally occurs; also, among others in which the play of light and shadow often conveys a striking effect, a white building upon which the sunshine falls, picking out all projecting details and casting clearly defined shadows over flat walls.

FOREST-SHADOWS WILLIAM S. DAVIS

SUNLIT WOODS WILLIAM S. DAVIS

In the forest the tree-trunks and foliage afford an opportunity for massing the shadows effectively, while the sunshine which finds its way through, flickering and dancing upon the soft carpet of leaves and moss below, or bringing out in strong effect interesting roots and bole of some old woodland monarch against the shadowy depths beyond, gives accent and a feeling of warm sunlight to the whole.

With the arrival of winter's snows some

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SUN-STRIPED WILLIAM S. DAVIS

very beautiful shadow-patterns are projected upon the pure surface, especially along the edge of country-roads and woods. Not infrequently the patterns thus formed are quite complete enough to warrant full concentration of interest upon them to the practical exclusion of everything else, except just enough material of deeper tone to indicate their source or furnish the necessary contrast.

In a somewhat similar way the level surface of a veranda-floor, patio, terrace and the like, often receives shadows from architectural details that furnish material for unique compositions. Especially is this likely to be the case around the arched entrances or colonnaded façades of large buildings. One of my illustrations, "Sun Striped," suggests some of the possibilities in subjects of this nature, although there are, of course, many ways of dealing with them. This was taken on a bright summer's day at the Seventh Avenue entrance of the Pennsylvania Station in New York. The treatment emphasizes the flat decorative element in the spacing of light and dark tones rather than depth or perspective.

As the sunshine motive is produced in so many ways, it is quite impossible to say at what time of the day or season such effects are most likely to be seen at their best, therefore the only useful suggestions I can give now are about the technical means employed to capture them when found.

First, as all tones in nature are composed of varied colors, it is evidently essential, when a composition is met with that contains the desired gradation, to preserve the relationship between tones by obtaining a reasonably truthful translation of the colors composing them. Since an ordinary emulsion is not capable of doing this, the need of orthochromatic or panchromatic plates is indicated, as they are so much more sensitive to the warm colors which compose the highlights of a sunshine-subject. Even they, however, are too readily affected by the cool tints, blue and violet; consequently, when such colors are present to an appreciable extent a suitable ray-filter is also needed to hold them in check, and thus secure a balanced color-rendering. The depth of filter required for absolute correc-

AFTERNOON-SHADOWS WILLIAM S. DAVIS

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tion varies with the sensitiveness of the particular plate or film to different colors; but for ordinary purposes a four- to five-times filter will give sufficiently good correction with orthochromatic emulsions, although it is a good plan to have a stronger one, say eight times, for use when greater emphasis upon bright warm tints is desired.

When plates are used it is an advantage to have them backed or double-coated, on account of permitting greater latitude in exposing, and, when extreme contrasts are present, better gradation at both ends of the scale.

The highest lights, such as sunshine on water or near white objects, are sometimes so strong that the refractive rays thrown off frequently make the edges of details appear blurred to the eyes; so as this is part of the effect in such instances it may well be retained in the photograph by using the lens at a large aperture and diffusing the focus to some degree throughout, the amount depending upon the nature of the subject.

In exposing one has to consider the need of retaining so far as possible the sparkling gradation of the light tones, when the effect is a brilliant one, together with enough detail in the shadows to ensure transparency and atmospheric quality. It is true that the greater the intensity of light the darker the shadows appear by contrast, so the eyes cannot under such conditions accommodate themselves sufficiently to note full detail in both extremes of the scale at the same time, consequently the omission of some gradation in certain parts in order to concentrate interest elsewhere is in accordance with the visual impression; but this must not be overdone, for some gradation and quality of light can always be seen in the strongest shadows, and if this is not retained in the picture one cannot convey the feeling of luminous atmosphere and space between such parts and the spectator.

So much depends upon the particular tones it is desired to emphasize that it is difficult to advise regarding exposure; but when concentration upon the lighter portions is aimed for, an exposure just sufficient to penetrate the deepest shadows, followed by the application of a dilute developer, should give the quality wanted. With average landscape or architectural subjects, however, where massing of tones and moderate transition between gradations is needed to overcome "spottiness," a decidedly full exposure, even for the shadows, is advisable — then development in a solution of normal strength, but for less than the usual time. In all cases overdevelopment is to be guarded against, since dense blocked-up highlights destroy any sparkle, owing to the lighter tones merging into one and making it impossible to show gradation in the print.

After all precautions have been taken it sometimes happens that some light tones which could not be excluded in the first place appear in portions of the composition where they prove a distracting element, and in such instances the only remedy is either to reduce them locally on the negative or resort to touching up the finished prints. If the latter, powdered black lead (graphite) is a convenient medium for lowering light-spots on black-and-white prints, whereas soft pastel-crayon of the right color can be applied in a similar way to sepia-toned prints on matte or rough paper, in either case rubbing well into the texture of the paper.

Although a black print is fully capable of suggesting the brightness and general feeling of sunshine in a properly handled composition, there is no doubt that some subjects are more effectively presented in a warm sepia, or other appropriate color, with cream-toned highlights, while in all cases a great deal can be done by careful mounting to bring out the principal tones.

Photography and Painting

DR. W. WARSTAT

IN the early days after the discovery of photography it was prophesied that the new art would be nothing more than an aid to painting. At least that is what we may gather from the opinion expressed by the artist Paul Delaroche regarding photography when the question of giving a life-pension to its two discoverers, Niepce and Daguerre, was being discussed. "The painter," he said, "will in this process find an easy means to get a collection of sketches that he otherwise could obtain only by the expenditure of much time and pains, and then only in a far more imperfect way, however great his talent might be." It is also well known that that old master of artistic photography, D. O. Hill, who made his best pictures about 1843, had already employed photography as a technical auxiliary. At the present day the matter lies for the most part with the painters — that is, the portrait-painters — since they can use it as preliminary work and for convenience

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"WHEN DANCING SUNBEAMS ON THE WATERS PLAY"
WINTER-SUNLIGHT
WILLIAM S. DAVIS

THE PHOTOGRAPH

THE PAINTING

in saving the model unpleasant and time-robbing sittings, and, for themselves, as an aid to the memory, and in forming a foundation on which to build and perfect their pictures.

It must be of no little interest to the artistic photographer to compare such auxiliary photographs with the painted picture. In this comparison it should be shown how far the painter's reproduction of nature differs from that of the photographer — how far he changes the photograph in order to carry out his artistic ideas. In this comparison we shall learn exactly the character of the painter-artist's work; and then we can consider how far this artistic aim may be attained by means of photography alone. This means, however, nothing more than that we are coming to the solution of the old question of the relation between artistic photography and painting. We can then — supported in a measure by visible and provable demonstration — ask such questions as the following: "Is artistic photography really an art?" "What is there artistic in it?" "Is it the 'pictorial,' or is it something special, peculiar, even photographic?"

I succeeded recently in obtaining from a well-known and gifted portrait-painter, Herr Joseph Tibor, of Hamburg-Ottensen, permission to reproduce one such study-photograph which had been used as a basis for sketching and later for painting the picture itself. In the photograph, therefore, we have the rough groundwork — that is, the unretouched technical photographic reproduction — whereas in the portrait we have the artistic execution, i.e., the sum-total of the painter's impressions as expressed by his talent, temperament and artistic views, in a rounded-out and finished whole that bears the stamp of individuality. Both are produced from the same model, and it is to be observed that, in the way in which the model is posed and the tones of the clothing, the flesh, the hair and the surroundings are brought together in relation to one another, a considerable artistic aid was afforded.

What such preliminary artistic work means, the artistic photographer will fully understand, because a subsequent correction of this work by photographic means is disproportionately more difficult than it is for the painter. It may, therefore, perhaps be said that in this preliminary work the photographer not only had to produce the same, but even more than the painter. While the painter may satisfy himself in arranging the pose of his model and bringing the colors and their tone-values into harmonious relation with one another — in short, determine once for all the constructive elements of his picture, considering the treatment of details as unnecessary — the photographer must really pay attention to all these details; he must observe the fall of the background, the direction of the lines, and the perspective relation of the various details to each other. He must not only consider their

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esthetic value, but he must know how the various esthetic values can best be reproduced, technically, by changing their positions or moving them around. This applies especially to the lighting and tone-values.

If a photographer who is accustomed to work with an eye to artistic effect will examine such a study-photograph, he will recognize at once the correctness of the foregoing remarks. Much that the painter would have passed unnoticed, saving himself for the development of the subject proper of his picture, the artistic photographer must attend to beforehand. He would, for example, so arrange the shoulder-shawl that the cast of the folds about the neck would be a little harder, and between the right arm and the breast somewhat more plastic. Further, he would choose his lighting and exposure so as to bring out the plasticity of the flesh and the figure, and so arrange that the flesh should have a warmer tone. He would probably also have arranged the surroundings with more individuality.

The painter has done all this afterwards in working out the painting. In doing so, he has changed a whole series of esthetic values, representing them differently from what they are in nature, and as they are in the photograph, even adding new ones. First, he has changed the impression of roominess. He has taken the figure out of the roomy, realistic surroundings and arranged it by itself in an ideal spacing of the picture which is located and limited by the figure itself and the outlines of the painting. Above the portrait he has represented the light and dark patches as a purely pictorial value, with light and shade separated and set off against each other.

The realistic significance of these surfaces, part of the chair, the cushion, the drapery in the background, have disappeared; only the figure and the shawl have retained their realistic importance as the principal objects. The sharp contrast between the dark dress and the shawl — in nature dull lilac-colored — is almost eliminated. The dress has become a shade lighter, the shawl darker. Moreover, in comparison with the photograph, which makes the flesh almost chalky, the flesh-tones are much warmer. In a word, the painting is executed in middle-tones, whereas in the photograph the highlights and deep shadings, the clear portions and the deep shadows, were very prominent.

Finally, the painter has depicted the expression of the face somewhat differently from that of the photograph. On comparison it can be clearly seen that the photograph reproduces a momentary stiffness of expression, whereas in the painting the expression is deepened, enlivened, concentrated. No wonder; for the expression of the face is really a summary — that is, a summing-up of the individual observations of the artist during hours and days in the presence of his model.

The question now is, whether the photographer with his technical aids can attain results similar to those reached by the painter. We have shown that the photographer, by intensive preliminary work on the model, can obtain a great deal before making his exposure, that the painter, in our example, had to execute while painting. He can in such preliminary work even arrange an ideal spacing of his picture, and treat the temporary accessories as simply as possible or omit them altogether. He can also bring out the plasticity of form by the arrangement of the background, etc.

Where the preliminary work on the model itself is not sufficient, much can be done afterwards in printing the positive. One can, for instance, by the aid of the so-called artistic positive processes, such as gum- and oil-printing, suppress details that are too strongly realistic in the negative. With these processes, especially, the tone-values can be altered at will.

It must here be again pointed out how important a good selection of the portion of the picture to be reproduced is for a correct space-impression.

Only in one particular is the work of the painter unattainable by the photographer: he cannot in his picture depict the sum of expression, the spiritual expression, that results from full observation. Here we find an important point of difference between photography and painting. But the photographer can make good this deficiency in other ways. He must, by carefully watching the changing momentary expressions, endeavor to catch one that will be especially "fruitful." Long training in this and in rapidity of action when exposing will enable him to attain this object. This schooling of the eye, this presence of mind in seizing the right moment, is therefore something that the photographer must possess in a higher degree than the painter, if he would solve the problem of expression in photography.

If we again glance over what has already been said, we can state without hesitation that up to this last point the photographer apparently can obtain by his own resources everything that the painter can. Among photographers to-day, however, this point is still contested. There are champions of the photographic as well as of the pictorial around every prize. Some declare that the photographer is trying to imitate the painter, and the result is something between a photograph and a painting — a spurious art, neither photography nor painting. (In the preceding

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analysis the lack of color, inherent in photography, is disregarded.) This means that everything that tends to make photography "pictorial" is effected by painters' methods; i.e., in the same way and by the same means as the painter obtains them.

In fact, the champions of the "pictorial" are right in so far as the photographer must closely observe certain artistic fundamentals, such as in regard to spacing, pose of the figure, representation of motion, etc., in which he must have recourse to exactly the same artistic knack and devices in the solution of this problem as the painter. The photographer can learn immensely from the painter regarding these points, because the painter possesses a much better technical and artistic education and far more practice in the use of these means. Hence, it is highly instructive for the photographer to compare a photograph with a painting of the same subject, as we have been doing. At the same time, we are not saying that the photographer is obliged, everywhere and in all circumstances, to follow the methods of the painter. Let us return to our examples. The painter has taken the figure out of its realistic environment and placed it by itself in an ideal one. The photographer does not need to do that at all. It seems to be more in line with photographic technique to leave the figure in its realistic spacing and with its realistic surroundings, merely simplifying and harmonizing these values so as to give the whole an artistic setting. The photographer reaches then a quite different effect from that of the painter in this case. And even if the photographer has recourse to personal "pictorial" effects in the widest sense, when making the positive, nevertheless the original realistic character of the photograph cannot be obliterated.

Advocates of the "pictorial" will now say that photography is not pure art, because the realistic foundations have always something mechanical and impersonal about them. But it is just behind these realistic fundamentals that the photographer hides a very considerable amount of artistic work, and in the arrangement of his subject must show notably more artistic skill than the painter needs to; that his attention must extend to the smallest details, and that he must weigh to the fullest extent the esthetic value or worthlessness of these details to himself and in the technical reproduction of the picture. And after all this will it still be said that the purely photographic reproduction of a subject so treated and prepared is merely a mechanical, dead, impersonal technical production? No! Even out of this purely photographic reproduction will speak the soul, the personality, of the artistic photographer.

To be sure, in most cases these purely photographic reproductions will not be artistic photography. It will still be necessary to carry out and complete in the printing-process the artistic preparation already begun. In this — that is, in the gum- or oil-printing — the brush plays a more or less important part, and therefore the mode of working apparently approaches more or less closely that of the painter. But this outward approximation does not make artistic photography painting. If we should make that assertion, it would be doing a wrong to both artistic photography and to painting. But painting has infinitely more than photography can offer, and photography is, on the other hand, in many respects unsurpassable. Painters have often remarked to me in view of an artistic photograph: "We cannot do such things." But they can do others.

It is not right, therefore, because artistic photography, like every other art, must observe general artistic principles, and because in many technical points it approaches painting, to call it an imitator and an offshoot of painting. It is by reason of its characteristic and undeniably realistic technique something peculiar that is the more effective the more this peculiarity is prominent; it is simply "artistic photography." It can, of course, learn much from painting, and has done so in all its stages of development; but it must, should and can especially avoid following always and everywhere the methods of painting. It should, on the contrary, seek to solve certain problems in its own way with its own means. Photography has done so successfully, for instance, in the motion-picture line; and in this our present-day painting has again learned something from photography.

Photographische Rundschau.

For every art is a language, and to secure power and beauty and adequacy of expression a man must command all the secrets and resources of the form of speech which he has chosen

HAMILTON WRIGHT MABIE

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VANITY

WILLIAM SHEWELL ELLIS

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Making Commercial Photography Pay

ROBERT F. SALADÉ

IT is not essential for efficient photographers to wait for opportunity to knock upon their doors. With a little thought-sifting they can take their cameras and create their own opportunity. In addition to knowing how to do good work, all they need is a number of original ideas in order to get plenty of profitable business.

In a measure, the commercial photographer's situation is like that of a literary worker, or an artist-painter — he must plan and execute an out-of-the-ordinary product, and must then find a market for it. Let this work be beautiful as well as useful, however, and there will be no difficulty to sell it.

Recently, in Philadelphia, there took place a big Sunday-school parade. Thousands of children were in line, and each school was represented by different costumes, special floats, banners displaying the names of the churches, etc. On one of the main streets along which the pageant made its way is located an enterprising photographer. He had planned for the occasion, and, as each Sunday-school division passed, he photographed a carefully studied view of it. When the parade was over, he had some fifty different scenes, each one featuring the children of a separate school.

When the first assortment of prints was ready, the photographer placed a complete set on exhibition in his show-windows. Under each subject was a legend giving the name of the Sunday-school represented, and suspended over the display was a neatly lettered placard which stated that finished prints of each scene, beautifully mounted, could be bought in the shop for forty cents apiece.

Then, to the clergyman in charge of each church in question, the photographer mailed with his compliments a handsomely mounted photograph of the church's little folks on parade, and the clergymen's attention was directed to the fact that additional copies of the picture could be ordered at the rate mentioned in the photographer's windows.

Next morning one of the ministers telephoned and asked if the photographer would be willing to make up the prints in quantities to sell at lower rates. The clergyman wanted to buy forty-three copies and present one to each of the teachers and children represented. After some figuring, the camera-man found that he could offer reduced prices when more than a dozen of the views were ordered at a time, so the 'phone-call was answered in the affirmative. Later, acting upon this "tip," he mailed a short, well-written letter to every pastor whose Sunday-school classes had been photographed, stating that the special rate had been decided on, and that, by "pooling," the scholars could each buy a picture at a considerable saving.

During the following two weeks most of the churches responded by ordering complete sets of the photographs, and numerous orders were received in the store from individuals who desired copies to mail to out-of-town friends. Meanwhile, the attractive window-display had been the direct means to win a lot of new customers for other work. It should also be mentioned that the photographer sold a number of choice views of the parade to local newspapers and to four religious publications, while a number of merchants bought selected copies to exhibit in their show-windows.

A few weeks ago a great national convention of business-men was held in one of the big hotels of New York City. In certain rooms of this hotel were installed some of the newest labor-saving machinery, which the inventors and makers wished to demonstrate to the delegates and visitors to the convention. Pains had been taken to make these exhibitions very attractive. The decorations of the rooms were beautiful, the demonstrators of the machines were attired in special uniforms and the furnishings of the apartments had been carefully planned by expert professional decorators.

When a certain alert commercial photographer heard about this through a friend, he immediately hustled to the hotel and offered his services to the committee in charge of the convention. He was informed that the hotel-photographer had already taken a number of good views of the conventionites in groups, but nobody had thought to have pictures taken of the mechanical exhibits. So, after obtaining permission, the "free-lance" photographer took several "human-interest" studies of the machinery-displays and their elegant surroundings. After the finished prints had been neatly mounted, copies were offered for sale to the manufacturers of the devices in question. Enough were purchased to make the venture successful. Then, the photographer sold copies of the best illustrations to several technical magazines which were covering the convention. Later, some of the

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delegates bought a few prints to use for publicity-purposes for the next convention.

Although this photographer has built up a substantial, steady trade through giving excellent service and the finest class of work, he never waits for customers to visit his studio when business slackens occasionally. He goes out and *creates* business. Not long ago, when things were a trifle slow, he took an unusual night-view of the great bridges over the East River; and because it was so far above the average night-scene of this character, he easily disposed of it to a well-known magazine-publisher for a snug sum commensurate with his effort.

When a new church, office-building, institution and so forth is completed — in the larger cities there is always some new structure being dedicated — our friend gets to work with his camera and takes the kind of photographs that readily sell in many directions. Take an office-building, for example; most of the business-firms located therein can at some period make good use of a picture of their home for publicity-purposes. But some business-men would never think of photography in this connection unless they were shown the finished copy, and that is what the photographer does — he shows something that can be made very useful to the purchaser. "Use a reproduction of this on your letterheads, on your business-cards, and incorporate a good-size halftone of it in your advertising-matter," suggests the lively camera-artist. He offers something that will aid a man's business, so he sells the photographs easily. Of course, there are other markets for the sale of such pictures — the technical journals and advertising-agencies, for instance.

When there is nothing else to do, this photographer studies and takes unique views of public buildings, parks, street-scenes, etc.; and in addition to deriving a lot of enjoyment out of such work, he also sells it at a handsome profit without difficulty. But these pictures are not of the ordinary flat variety. They are the work of an artist. They are beautiful and useful. Recently, he took a unique night-view of Park Row, New York, for example, and a well-known firm in the Tribune Building bought the picture for use in connection with its publicity-matter. This photographer has taken and sold many original illustrations of this character to publishers of magazines and house-organs. In a number of cases he has received as high as $50 for a special print, the buyers in this connection securing all rights to the plates.

Not long ago this commercial artist photographed an unusually interesting view of the New York Public Library. The splendid architecture of that famous structure was revealed in highlights and deep shadows. It was a masterpiece of photographic art. The finished prints ready, the question arose as to where to sell them to the best advantage, for our friend is in business for financial profit as well as for pleasure.

Now in great institutions like the New York Public Library there are many articles in addition to literary works. For instance, there are various mechanical devices used to aid in the detail-work of the library; business-equipment; lighting- and heating-apparatus; office-furniture, etc. So, after giving a number of these things close inspection, the photographer called on a certain manufacturer from whom the library had bought a well-known labor-saving device.

"It 's the most beautiful picture of the Library I 've ever seen," admitted the manufacturer, with admiration. "But what special use could I make of it?"

"Have halftone-plates made of it for your advertising-literature," suggested the camera-expert, "and mention the fact that your machines are installed in this grand institution. Think how highly this would speak of your machines."

"That 's a valuable suggestion," conceded the manufacturer; and he paid a substantial price for the exclusive right to the subject.

Through giving the finest work and perfect service this photographer has earned a good reputation among the class of business-men who are especially interested in artistic commercial photography. His customers are among the largest advertisers in the United States. Frequently he is ordered by certain concerns to go many miles away to make special photographs for advertising-purposes. It is not a question of economy, but of quality. The advertisers want extraordinary illustrations that will picture the subjects to the greatest advantage. They want effective *ideas* in photography, and our friend gets their orders because he mixes a lot of brains with his work.

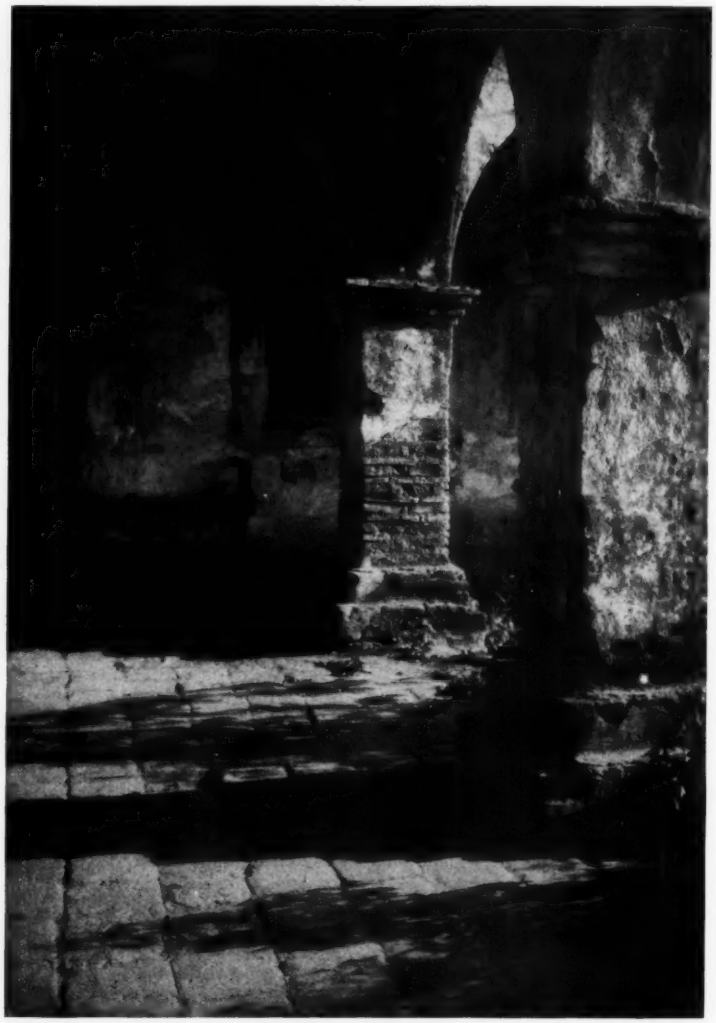
There is an unlimited field for the commercial photographer who, in addition to producing work of the highest order, can create clever ideas. Business-men are willing to pay a photographer generously for thinking out original selling-suggestions for them. Again, for example, in the show-windows of leading hatters one often sees attractive illustrations demonstrating how the newest headgear looks on Mr. Average Man. One enterprising artist took a number of such views, incorporating an added attraction. The smiling face of a pretty girl was shown in the background of the pictures. Live hatters bought copies of the prints without any argument from the photographer being essential. That girl's face

XUM

increased the advertising-value of the illustrations many fold.

Another photographer is specializing in original subjects for magazine-covers. Not exclusively portraits of pretty girls, but illustrations suggestive of the various months and seasons of the year; scenes of industrial and social activity; interior pictures of the home; unusual illustrations of mountains, woodlands, seashore and towns. With the aid of scissors, paste and India ink, this artist often creates original cover-designs that would test the skill of an art-painter. Thus there is a market somewhere for every good photograph that can be applied to commercial use. Thousands of subjects are used yearly in connection with advertising-matter; the technical journals, newspapers and standard magazines are constantly in need of unusual views suitable for their various purposes. Other fields are open for original subjects for postcards, calendars, window-display cards, etc.

A good idea will sell itself.



IN OLD CAPISTRANO H. P. WEBB

Dealing with Cracked Negatives

A. SCHAMASCH

THE question of repairing a negative that one has had the misfortune to crack has frequently filled the columns of photographic journals. Most methods described involve stripping the film from the cracked support and mounting it on a new one. Such a method involves considerable risk, for apart from the difficulty of getting the film to leave the original support without damage, it is very tender, and great care is required in mounting it. Moreover, if the film is broken into more than two pieces, this method is quite impossible; and if in two pieces, very nearly so, owing to the difficulty of registering two flimsy gelatine films without distortion.

Thus many photographers prefer not to risk the films, but make the best of it by laying the pieces together on a glass and binding them somehow.

The method I am about to describe, however, involves no risk to the film, and has given extremely good results.

We will deal with two cases:

(1) That in which the glass only is cracked, the film being unbroken.

(2) That in which the film and glass are broken into two or more pieces, but where the film is still adhering to the glass at the edges.

In the first case perfect results are obtainable, in so far as the plates repaired have been submitted to several people who could not locate the crack, which extended right across the plates.

The method is by the use of a solution of Canada balsam in xylol. Such a solution can be put up by a good chemist for a few pence. It should be of the consistency of salad oil or very thin treacle.

The method of procedure is as follows:

Lay the negative, film downwards, on a piece of paper, and with a match dipped in the solution go over the crack, leaving a train of the solution over it. In a few seconds the solution will probably be seen to have worked its way into the crack, which will have become almost invisible when examined by transmitted light. A slight bending-effort, so as to open and close the crack imperceptibly, will help matters, but great care must be taken not to damage the film. Heating the negative is said to make the solution run easier, but I have found no difficulty whatever with glass and solution cold.

After lying flat for a few minutes, the plate must be put aside to set hard. It is well to support the plate during this period in such a manner as to tend to close the crack, and so drive out surplus balsam. It may be supported at the two edges that are nearest parallel to the crack. The secret of success is to let it set hard; three days to one week should be enough, the length depending on the depth of the train of balsam left on the glass side. After this time the negative is placed, film down, on tissue-paper on a flat surface, and the surplus balsam scraped off with a knife. If after scraping off the top portion the lower part is found not hard, it should be left longer for this lower layer to set. If much balsam has been spilt over the plate it may be removed rapidly with a rag soaked in benzine or petrol, but such solvents should not be used near the crack, as it will tend to dissolve out some of the balsam. If properly done, the crack should be invisible without the closest scrutiny and the knowledge of where it was. It certainly shows no trace by any printing-process.

It is safer now to bind a piece of plain glass on the glass side so as to strengthen it mechanically.

In the second case the results obtainable, though not quite so satisfactory as those in the first, are superior to those obtainable by any method which involves stripping the film.

The two or more pieces are assumed to fit well, otherwise the plate is beyond repair by any process. A piece of glass of same size as the negative is taken and a pool of the balsam solution poured on. The pieces are slid into position, film side up, onto the glass, taking care to exclude air-bubbles. They are then pressed into contact and register. The balsam will find its way up the joints and probably ooze through to the film side of the crack. The pieces should be clipped in position with strong paper- or letter-clips, and allowed to set. As the solution is between two close-fitting glass surfaces, this takes considerable time, but one to two weeks will probably be found sufficient. When set, the balsam *must be removed from the film side*. In this case it cannot all be scraped off with a knife, but as much as possible should be removed by this method, without endangering the film. For the rest the benzine-soaked rag must be used. The less time allowed for the benzine to work its way into the crack the better will be the result. Of course, the crack will show where the film joins, but there will be no visible crack in the glass. A little retouching on the negative, and a very passable enlargement may be made, which

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AFRICAN DAISIES H. R. DECKER

may be retouched and copied. In many cases even a contact-print will be quite passable.

In the last case I did by this method I was astonished to find that, after all the balsam had been removed from the film near the crack, the film there had a faint yellow stain, probably drawn from the balsam. I eventually removed this by treating the negative with alternate baths of weak bleaching-lime and weak nitric acid. Perhaps some reader will find a simpler method.

In conclusion, I may say that though I have explained the procedure in detail, it is in reality far easier than it sounds. The only disadvantage is that the Canada balsam solution is very sticky after a few moments' exposure to air, and has a nasty habit of getting where not wanted. Particularly in the second method, where the stuff oozes out between the plates for a considerable period, it is rather difficult to keep the fingers clear of it, and if they get sticky it is not easy to adjust the pieces of negative in register.

The Amateur Photographer.

ALL art is "decorative," even in its applied forms, and, while it is not only proper but also necessary to make studies, these should not be exhibited, the person who entitles an exhibition-picture "Study" simply advertising his own affectation or his paucity of imagination. Many prints and paintings are shown which have no reason to exist except that they are pleasing arrangements of line and tone, though some of them are undeniably beautiful, and for that reason are valuable additions to our store of desirable pictures.— PAUL LEWIS ANDERSON, in *Pictorial Landscape-Photography.*

A WINDY DAY — H. L. BRADLEY

Platinum Water-Developed

GUY SPENCER

PLATINUM is conceded by the cultivated to be the paper *par excellence* for pictorial effects. The beauty and richness obtainable, their absolute permanency, the ease of manipulation, the variety of modifications possible in development, make it the paper best adapted to the needs of those who desire prints of a distinguished character.

An impression prevails that platinum requires special kinds of negatives to secure the best results. One authority writes that any good negative that gives a desirable print by other methods will afford a still better one on platinum, but he qualifies this statement, however, by saying, "Platinum printing is not favorable to poor and indifferent negatives." If by poor and indifferent is meant thin and flat, platinum may produce prints anæmic and weak, but by a little "humoring," which takes the form of clear water for the developer, these same negatives will give place to prints of soft tones and pleasing gradations.

Water-development has possibilities which every worker in platinum who has not tried it will find absorbingly interesting, and highly satisfactory in results. The process is suited to very thin, flat negatives, that with the regular potassium oxalate yield prints of undesirable flatness, dull and tame.

Through the "Imp of Mischance" it often happens that a particularly clever pose, a portrait impossible to duplicate or something specially desired of the best comes out deficient in printing-quality. When this happens try water for the developing-agent, then make another print, using oxalate, and note the difference. Place the two together for comparison: that developed with oxalate is heavy with a leaden sameness; the one developed with water gratifies by reason of soft gradations. And, too, the operation is decidedly simpler than the various modifications recommended for negatives that are not up to the standard.

The only requisites are a thin, flat, portrait-negative, some platinum paper of the so-called black variety (the sepias proving less satisfactory), clear water, room-warm, and the bath of hydrochloric acid. It is always difficult to give any very definite instructions regarding the depth of printing. Each worker has his own particular mode of judging when the action of light has gone far enough. Speaking generally, print deep. When the image fades out and then returns is about the time to remove it from the frame. However, a few experiments will determine. A slightly reddish hue visible through the clearer portions of the negative seems to indicate over-printing.

When ready for the developer, the paper is immersed in the clear water after your own pet fashion and allowed to remain until your individual taste is suited. Development is somewhat slow, and up to a point the print will continue to darken. It is then cleared in the acid bath, washed and dried as usual.

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MT. UTSAYANTHA, STAMFORD, N. Y. WILLIAM LUDLUM, JR.

Darkroom-Lights Up to Date

E. J. WALL, F.R.P.S.

IN considering the question of darkroom-lights one must take into consideration the sensitive surfaces to be used, and we can divide them into three main classes: (a) positive processes, (b) ordinary and orthochromatic plates and (c) panchromatic plates.

To prepare filters with accurate absorptions it is necessary to coat a given quantity of dye on a given area of glass, but as an alternative it is possible to remove the image from waste negatives with Farmer's reducer or potassium cyanide, and stain by immersion in a dye-solution. It should be pointed out, however, that this method entails the use of a considerable quantity of dye-solution, and with the present shortage and high prices it is not an economical method. It also really calls for the use of a spectrograph. In the following formulæ alternative dyes are suggested, so that if one dye cannot be obtained probably one of the others can be.

The size of the glass is merely a matter of personal opinion. At Syracuse University we use 8 x 10, fitted on three sides of a wooden box, with a 25-watt Mazda lamp. These boxes are placed three feet above the sinks and give ample light. Our darkrooms, at least two of them, measure 9 x 17 feet, with 14-foot sinks, and two lanterns are spaced on the one side and one in the center on the other. But it would be as well to add that so nervous are some students that at first they work with only one lantern. The light is so brilliant as to appear unsafe, but it actually is a very safe light. I do not believe in working in chimerean darkness, and it is perfectly immaterial how much light you have — in reason — as long as it is really safe. For panchromatic plates the darkroom measures 17 x 18 feet, and the sinks are L shape, and we use only two lanterns, one on each sink, and they are 20 feet apart.

It would be as well to explain that the first thing I teach a student is that he cannot by any

chance put into a plate anything that is not there nor take out of a plate anything that is there. We develop entirely by time, using a developer of constant composition and constant temperature, and we determine the time that will give us a given degree of contrast with every plate and developer that we use. If we want to try a new plate or developer, this is the first thing to be done, and we rely on our factors thus found absolutely.

No one can improve a negative by holding it up to the darkroom-light every few seconds to see how it is getting on. What is and what is not in the negative is determined once for all by the exposure. The printing-qualities of the negative can be determined, with a given positive emulsion, by the duration of development, and if the necessary factors are determined there is not the slightest need to look at a negative at all during development.

These preliminary remarks, which may seem absolutely beyond the question, are made to prove that the darkroom-illumination is dependent to some extent on the person that works in it. When a man wants to haul a poor film or plate out of the developer every minute, and examine it within a foot or two of the light for half a minute, there is practically no light that can be safe, for the sensitive salts of silver, even when wetted with the developer, are, if exposed long enough, sensitive to the whole of the spectrum, and thus fog must be caused.

Dealing with the first class of sensitive surfaces, we know that gaslight papers can be manipulated in weak white light; but it is a dangerous game — for amateurs — and a bright yellow light is equally convenient, quite as pleasant and very much safer. But assuming that we want to work the more sensitive bromide papers and lantern-plates in the same room, then an orange light is preferable.

In the following formulæ the quantities are calculated for 8 x 10 glasses, and in all cases an eight-percent solution of gelatine should be used:

A

Gelatine solution	65 ccs.
Tartrazine	0.6 grams
or Brilliant yellow	0.25 grams
or Naphthol yellow	0.5 grams
or Brilliant orange	0.5 grams
or Auramin O	0.5 grams

B

Gelatine solution	65 ccs.
Yellowish eosin	1.0 gram
or Rose bengal	0.25 grams
or Xylene red	0.125 grams
or Fast red D	0.125 grams

For fast ordinary and orthochromatic plates of all kinds, which may be used in the same darkroom, the following may be used:

A

Gelatine solution	65 ccs.
Fast red D	0.25 grams
or Rose bengal	0.25 grams
or Rhodamine	0.25 grams
or Xylene red	0.25 grams
Tartrazine	0.25 grams

B

Crystal violet solution	18—36 ccs.
Gelatine solution, 12-percent to	65 ccs.

Instead of the crystal violet, methyl or ethyl violet may be used — in fact, crystal violet is only a pure methyl violet. These dyes are sensitive to light, and therefore a stock-solution should be made as follows:

Dye	1.0 gram
Cupric sulphate	5.0 grams
Glacial acetic acid	10 drops
Water to	100 ccs.

and this used in the quantities given. If the smaller quantity be used then the light is so bright that great care must be exercised or it will assuredly fog an orthochromatic plate. Personally I prefer the full quantity of 36 ccs. Or one may use:

Gelatine, 12-percent solution	30 ccs.
Tartrazine	0.5 grams
Crystal violet solution, as above	36 ccs.

Or A

New coccin	0.25 grams
Gelatine solution	65 ccs.

Or B

Hoffman's violet	0.06 grams
Gelatine solution	65 ccs.

Both of these give plenty of light and are quite safe. The following is a very dark, deep red, which is no safer than the others, though it looks so.

A

New coccin	0.25 grams
Naphthol green	0.05 grams
Gelatine solution	65 ccs.

B

Hoffman's violet	0.0625 grams
Gelatine solution	65 ccs.

For panchromatic plates, which include all screen-plates such as the Autochrome or Paget plates, a deep green filter must be used:

Naphthol green	0.5 grams
Patent blue	0.12 grams
Gelatine solution	65 ccs.

or preferable even is the following:

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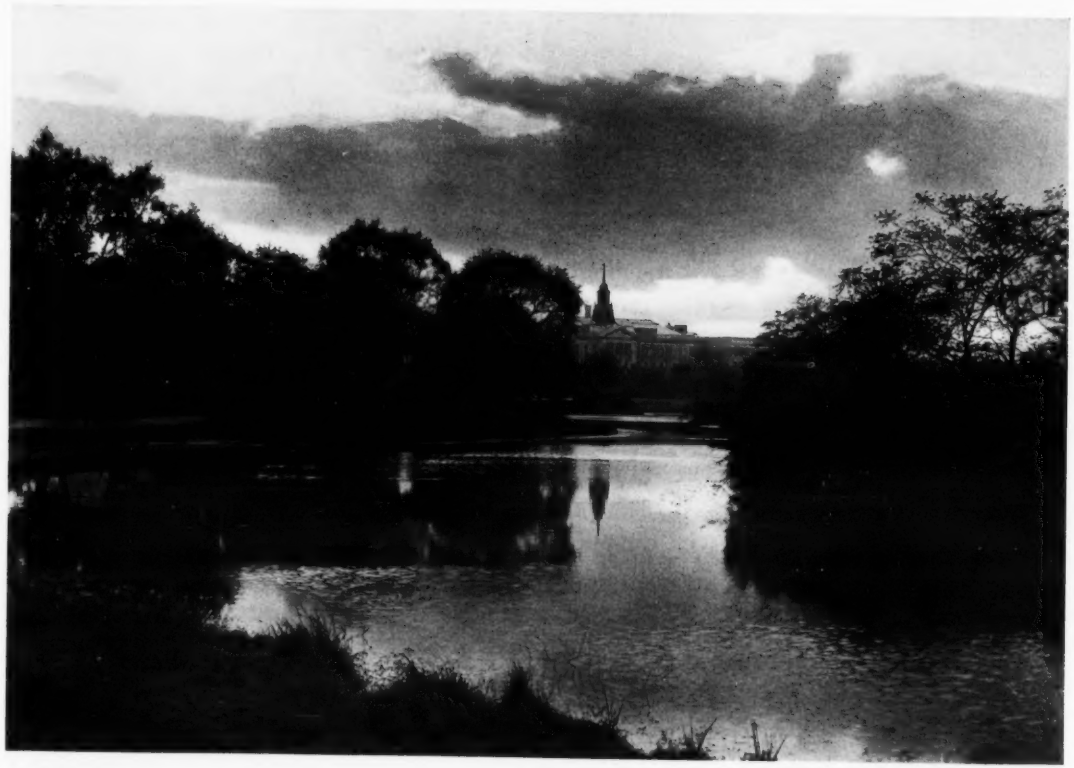

A FENWAY VISTA

E. H. WASHBURN

A

Brilliant orange	1 gram
Gelatine solution	65 ccs.

B

Naphthol green	1 gram
Gelatine solution	65 ccs.

In order to make the filters, photographic gelatine need not be used. Any soft household gelatine will do provided that it is well washed first by stirring it in water and pouring off the water, and repeating the operation three times. It is as well to make up a good stock of the plain gelatine solution, and if the gelatine be washed then it should be melted in the water that it has absorbed, and the bulk made up to the required quantity with water. The solution should be filtered through well-washed Canton-flannel. Where the quantities of the dyes are very small it is advisable to make up stock-solutions, and in most cases a 1-percent solution can be made.

A leveling-stand will be required, but this can be made easily with a sheet of plate glass and three leveling-screws, or even three wedges of wood.

The temperature of the gelatine-solution should be not less than 130° F., and the graduate used to measure out the dyed gelatine should also be placed in hot water. The addition of the dye-solution will not lower the temperature enough to cause trouble. When the quantity of the dye is large enough to be weighed out in the dry state then great care must be taken to see that it is all dissolved before coating. My practice is to make up the dyed gelatine-solution in a 250 cc. bottle, gently shake the bottle around and around, and then place it in hot water and leave it there all night for the bubbles to subside, melting it up the next day for coating. The use of the dyes in solution prevents this trouble, which is not of much moment, as on pouring the dyed gelatine out into a graduate any bubbles can be broken at once with a spill of blotting-paper. I keep a small pile of little spills of blotting-paper by the side of the leveling-stand, as they are very handy in breaking any bubbles that may form in pouring.

Having measured out the dyed gelatine the lip of the graduate should be brought quite close to the surface of the glass plate in the center of one end of the glass; then start pouring, and run the graduate to the other end of the glass. One thus obtains a long pool, which can be spread out to the edges of the glass easily with the tip of the first finger. I prefer to use this, although it dyes the finger, as it will not chill the gelatine as will a glass rod. It will be found easier, too, to coat the glass if it be placed on top of a radiator for some time so as to get warm. It requires some little practice, of course, to be able to coax the gelatine out to the edge of the glass without letting it run over, but one soon gets the knack.

The glass must remain untouched till the gelatine has thoroughly set, and can then be reared up to dry. There are one or two points which should be observed. Hard gelatine should not be used or the film is apt to split and subsequently peel under the heat of the lantern. This can be prevented by adding a little corn syrup or glycerine to the dyed gelatine, about 1 percent; but it is preferable to avoid this if possible, as with some dyes these act as sensitizers and the dyes fade. The glasses must be clean.

In some of the above formulæ it will be noted that two solutions are given, A and B; this means that they must be coated on separate glasses, as the dyes are not miscible, and will precipitate one another. The two glasses must be bound together.

In all cases it is advisable to place in between the two filters a sheet of thin paper. With all the formulæ a piece of tissue or thin onion-skin typewriting-paper is sufficient. The above formulæ are calculated for 16-candle-power carbon-filament lamps, but if Mazdas are used, or if the lights seem too bright, it can easily be reduced by using the thinnest possible blotting-paper and soaking in a solution of a dye, which may for the yellow and green filters be eosin, rhodamine or rose bengal, and for the red filters methyl violet. But the dye-solution must be weak or else they will reduce the light too much. Only two sides of the filters should be bound up, leaving the top and bottom open for the escape of any moisture.

Naturally one may soak thin blotting-paper in dye-solutions and when dry bind up between plain glasses, but I have never worked out such formulæ, and the only one that I know, and have never tried, was given some years ago by Namias:

Tartrazine	10 grams
Rhodamine	1 gram
Water	500 ccs.
Alcohol	500 ccs.

Increase of the rhodamine will give a deeper red, and staining a paper with methyl violet and binding with the above will give a very deep red. For green paper screens the same dyes may be used as recommended above for the gelatine filters, and it should be possible to dissolve the given quantities in a little alcohol and water, and paint on the paper. Naturally, if one has a spectroscope, or rather a spectrograph, it would

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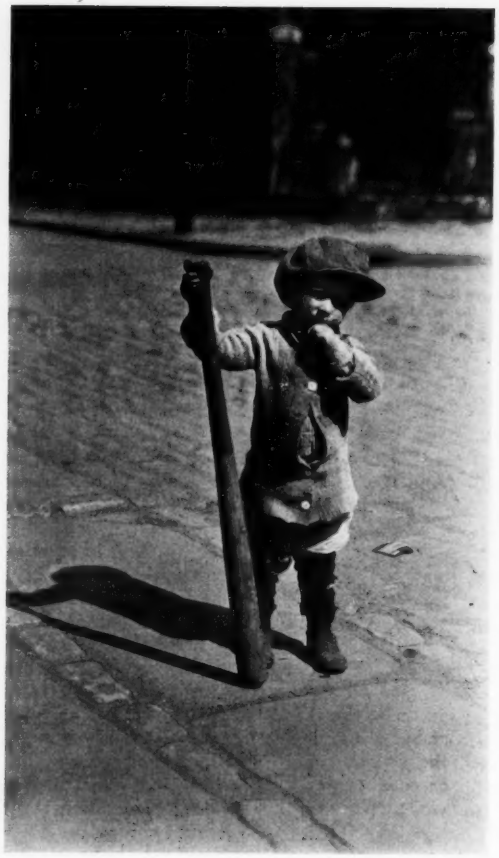

BASEBALL IS IN SEASON HORACE W. LEEDS

be easy to test out the dyed papers. Visual examination with a spectroscope may be misleading, as a filter may pass the extreme violet, to which the eye is so little sensitive that it would not be noticed, and yet this would be almost certain to fog the plate.

As regards the drying of the filters I will give a tip that may be useful to many. For drying all negatives or filters we use one of the small electric fans, such as may be seen in many a barber's shop or bootblack parlor. They are not expensive, can be attached to any lighting-socket and by the turn of a switch either hot or cold air may be obtained. We can dry an 8 x 10 negative taken from the washing-tank, without wiping off the superfluous water, with one of these fans in half an hour, using cold air only; but if the film is wiped with a dry cloth, and cold air turned on at first for ten minutes, and then the blower placed three feet from the negative and the hot air turned on, the plate will dry in twenty minutes. At this distance the temperature of the air is 90° F.

It will be noted that I have given no formulæ for daylight for the simple reason that I do not know them, and I do not believe in using daylight as the illuminant for the darkroom. But assuming that the sun never shines onto the window, then, roughly, one-third more of the dyes must be used.

Those who have had the privilege of visiting the Research Laboratory at Kodak Park will have been struck by the indirect illumination employed. One cannot see the lights at all; they are enclosed in boxes opaque underneath, and the light is thrown onto a white ceiling, so that

PARIAN GATE, WALLED CITY, MANILA — R. W. SQUIRES

a very pleasant soft illumination is obtained. Dr. Mees has recently stated (*British Journal of Photography*, October 22, 1915, page 693) that he has found that a 25-watt lamp covered by a Series 1 Wratten safe-light, 10 x 12 inches, hung about three feet from the ceiling, will give ample light for every 100 square feet of floor-space. For bromide papers a Series 0 safe-light, and for gaslight papers a Series 00, and for panchromatic plates a Series 3, will give as much light as can be used.

The use of reflected light is convenient, and may be adopted with any of the above formulæ. This raises the point as to the color of the dark-room-walls. Many writers have recommended black or other dark colors, but this is absurd. If the light is of the right color in the first place — that is to say, if it is safe — then white should be the only color employed, for this naturally gives the maximum illumination.

It has been suggested that separate red and green lights might be used and thus a brilliant whitish light obtained, and a patent has actually been taken out for this recently. The same idea was promulgated many years ago when a solution of nickel and cobalt salts was suggested. But this is all foolishness, for no admixture of lights that will give any semblance of white can possibly be safe.

The whole question of darkroom illumination ought to be on a scientific basis, and we ought to have a standard of safety, of brilliancy and accurate formulæ. Some years back, in England, Drs. Mees and Baker read a paper on the subject; von Hübl has defined brilliancy in units of distance at which a certain size of type can be read, a plan which was first suggested by Houdaille about 1892. My test is my watch-face; if I cannot read this at the normal distance, which is that when I pull it out of my pocket, about fifteen inches, I consider the illumination poor. As to safety, my test is to expose a plate at a distance of three feet, one-half being covered with black paper, for thirty seconds to the light. If fog shows on the uncovered half then I do not consider the light safe. It will be noted that the plate is exposed dry, and it is then much more sensitive than when covered with the developer.

Let me add one precaution: make the lantern-body of sufficient size and so ventilated that the glasses will not get unduly hot. Many dyes are sensitive to heat, and it is possible so to heat up a gelatine filter that the film will split to pieces in less than three months. We have used our lanterns in the school at Syracuse University for two years, and they are as good as the day they were made, and the lights are burning at least six hours a day for eight months in the year.

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MALE POLYPHEMUS NEARLY DRY

MALE POLYPHEMUS WITH WINGS SPREAD

FEMALE PROMETHEA JUST OUT

XUM

CELEUS CATERPILLAR

PUPA-CASE OF CELEUS MOTH

FEMALE POLYPHEMUS

Photographing Moths

EDWIN A. ROBERTS

A VERY interesting branch of nature-photography, and one that does not require unlimited time and patience, is that of making a series of pictures showing the life-history of the beautiful, large night-moths that make their appearance in the months of May and June, also their caterpillars and cocoons. I hunt for caterpillars in the summer, and for the cocoons, that are fastened to the branches of trees and shrubs, in the fall and winter, as they are more readily seen after the leaves have fallen. Some caterpillars, however, burrow into the earth, hollow out a cell and change to a pupa there. I have found these pupa-cases in newly-plowed fields and gardens. The cocoons of the spinners, and the pupa-cases, of the earth, I keep in as nearly natural conditions as possible through the winter. About the first of May I place them where I can watch them as I go about my work. Then, as they emerge, a Cecropia to-day, a pair of Promethea to-morrow — or perhaps it will be a Polyphemus — the wondrous beauty of nature grows on me, and my spare time is delightfully occupied.

In my work, I use a south window, as it is the only one available; and as the studies are made before the sunlight strikes the table, on which the specimens are arranged, no diffusing-screen is required. I place the table three feet from the window and one foot back from the farther side. If the subjects will remain still for the necessary exposure I screen the lower part of the window, otherwise the full sidelight is used. Different shades of gray mounting-papers are used for the background; they also make excellent reflectors. I use a small hand-vise set in a large-mouthed bottle to hold the branch that the subject is to be photographed on. This vise is very useful, as the branch can be held in any position desired.

The camera used is a Seneca No. 9 fitted with a convertible rapid rectilinear lens of 8-inch focus, and has a bellows-extension of 22 inches, which permits working close to the subject. Isochromatic and panchromatic plates give a very good rendering in monochrome of the beautiful markings and colors of the moths. A light-filter is not used because of the necessarily long exposure. Recently I made instantaneous exposures with the Agfa flashlamp, the resulting negatives being very pleasing.

The Celeus caterpillar, known as the tomato-worm, was taken at 9 A.M.; stop, F/16; 40 seconds; Standard Orthonon plate.

Pupa-case of Celeus moth, same as above.

Female Polyphemus, shortly after leaving cocoon; 2 P.M.; dull light; stop, F/11; 60 seconds; same plate.

Male Polyphemus, wings nearly dry; 4 P.M.; stop, F/22; 60 seconds; same plate.

Male Polyphemus, wings spread; 9 A.M.; stop, F/22; 45 seconds; same plate.

Female Promethea, just out; 7.30 A.M.; stop, F/16; 30 seconds; same plate.

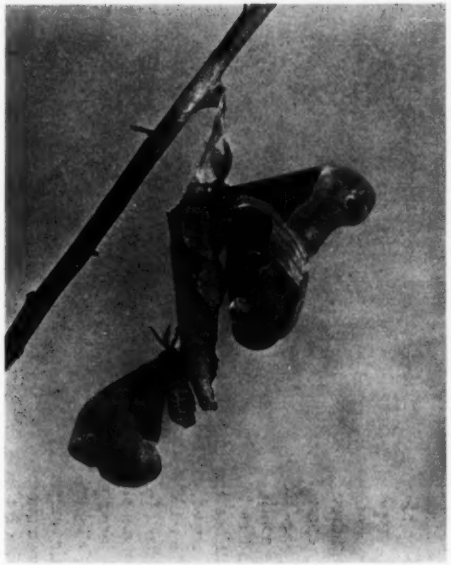
Pair of Promethea; 10 A.M.; dull light; stop, F/16; 50 seconds; same plate.

Female Cecropia, clinging to cocoon; 8 A.M.; stop, F/16; instantaneous flash, with 15 grains of powder; Wratten Panchromatic plate.

Cecropia, with wings spread, same as above.

It is advisable to consult a book on moths as an aid in identifying them. "Moths of the Limberlost," by Gene Stratton Porter, and "The Moth-Book," by Holland, are excellent.

XUM



A PAIR OF PROMETHEA

FEMALE CECROPIA CLINGING TO COCOON

CECROPIA WITH WINGS SPREAD

EDITORIAL

Faked War-Photographs

THE production of faked war-pictures and their almost indiscriminate publication in newspapers and periodicals goes merrily on. Thus we have an alleged photograph, made at close range, of an observation-party high up in the lofty spire of some cathedral or municipal building, in one of the belligerent countries, and being used to justify the destruction of the edifice. The fact that an enemy photographer could not have made such a picture appears to be of little consequence; but the faker may console himself with the thought that no one will question the authenticity of the picture; or, if asked for an explanation, he will simply mention the expediency of the telephoto-lens. Yes; one need only to look on the ground-glass of the outfit and see what can be got at a distance of, let us say, five miles.

Then there is a snapshot of a squad of Turkish infantry drilling on the plains of Mesopotamia, recently published in an American periodical. There is nothing characteristic about the landscape; in fact, the topography is extremely indefinite. If one had been near when the exposure was made, he might have seen that the scene was laid somewhere in Uncle Sam's territory.

Or, let us take the photograph of the trial by court-martial of a French spy, so vividly portrayed by the camera. To be sure, the officers sitting around the table wear the German uniform; the sentry with gun and Pickelhaube stands at the left, and near him the informer; while at the right, in the foreground and facing his judges, stands the prisoner. But the large group is arranged so carefully, with an eye to the artistic and dramatic effect, as to arouse suspicion. Certain other inconsistencies in the picture suggest that the scene was staged and that it is not a real incident in the great struggle.

In this class of photographs should be included unusual military scenes, such as engineers, fully equipped, scaling a steep mountain-side; or cavalrymen forcing their stumbling horses down an abrupt declivity. Here the original obliquity of the precipice has been changed to appear almost perpendicular — due to the manner of making the photographic print — resulting in pictured feats that are hair-raising, but physically impossible. There is no doubt that a large percent of so-called war-photographs are clever counterfeits produced in this country. They easily deceive the uninitiated and satisfy the general desire for novel and thrilling episodes of the world's greatest war.

Parcel-Post for Photographs

IN the March issue we were induced to state that photographs could not be sent by parcel-post. This is not strictly true. The Department has ruled that when an unsealed package of photographic prints weighs more than four pounds it may be transmitted at the parcel-post zone-rates of postage. When such a package weighs four pounds or less, then it is subject to postage at the rate of one cent for each two ounces or fraction thereof, regardless of distance, within the limits of the United States and territories.

Naturally, if a package weighs less than the amount fixed by the Department for parcel-post, it can easily be made heavier by the addition of pieces of board, or any other convenient material to serve as ballast, so that the package, ready for mailing, shall weigh over four pounds — the minimum rate of postage being for five pounds. For instance: it costs sixty cents to send an unsealed package of photographs weighing five pounds to any point in the eighth zone. Hence, if a package of photographs weighing, let us say, forty ounces is to be sent from Boston to Denver by third-class mail, and costs twenty cents, it would be folly to increase its weight by adding worthless ballast merely for the sake of using parcel-post, which would cost fifty-one cents plus the expense of the ballast, making a total cost of about sixty cents — three times the cost of third-class mail! But the postage on this ballasted package would be only nine cents if the point of destination were within the first or second zone, as from Boston to Worcester or to Albany, for instance; and yet but seven cents if within the local postal district.

Therefore, parcel-post is a cheap means of transportation for short distances — the first three or four zones — third-class mail being used for more distant points. Even if not used as ballast, a couple of strong boards affords first-rate protection against possible injury in transmission by parcel-post, which transports articles of a very miscellaneous character. Professional photographers, who frequently send heavy packages of prints within the city-limits, will benefit by parcel-post.

PHOTO-ERA MONTHLY COMPETITION

For Advanced Photographers

Closing the last day of every month. Address all prints to PHOTO-ERA, Monthly Competition, 383 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $2.50.
Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Rules

1. This competition is free and open to any camerist desiring to enter.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. ***Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. *Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.*

4. *Each print entered must bear the maker's name, address, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what competition it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. If suitable, they will be published in PHOTO-ERA, full credit in each case being given to the maker.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

7. The prints winning prizes or Honorable Mention in the twelve successive competitions of every year constitute a circulating collection which will be sent for public exhibition to camera-clubs, art-clubs and educational institutions throughout the country. The only charge is prepayment of expressage to the next destination on the route-list. This collection is every year of rare beauty and exceptional educational value.

Awards — American Scenic Beauties

Closed February 29, 1916

First Prize: Otto W. Bahl.
Second Prize: Clarence Teamer.
Third Prize: None awarded.
Honorable Mention: C. K. Baker, James C. Baker, Arnold Brigden, C. M. Campbell, J. H. Field, A. M. Holcomb, Carl H. Kattelmann, F. B. Schenck, Dr. F. F. Sornberger, Alice Willis.

Special commendation is due the following workers for meritorious prints: Albert W. Ayre, Frederick Cramp, Beatrice B. Bell, O. C. Dean, Eva L. Eden, F. Flannery, Franklin I. Jordan, Archie R. McKinstry Harry G. Phister, Kenneth D. Smith.

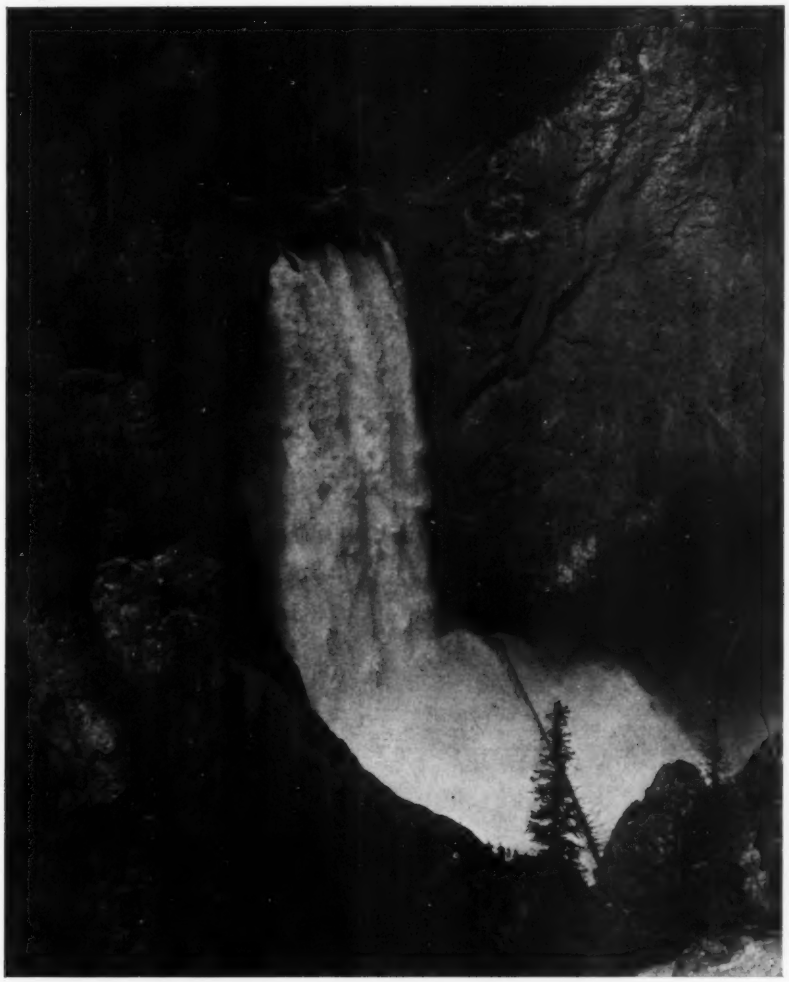
Subjects for Competition

"Subject for PHOTO-ERA Cover." Closes April 30.
"Miscellaneous." Closes May 31.
"Speed-Pictures." Closes June 30.
"Nature-Study Subjects." Closes July 31.
"Figures in Landscape." Closes August 31.
"Field and Wood." Closes September 30.
"Marines." Closes October 31.
"Camp-Scenes." Closes November 30.
"Flashlights." Closes December 31.

Photo-Era Prize-Cup

IN deference to the wishes of prize-winners, the Publisher will give them the choice of photographic supplies to the full amount of the First Prize ($10.00), or a solid silver cup of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

ESTHETIC pleasure is like sympathy, which is not always provoked by resemblances, but often by differences. It is not true that a people seeks in works of art only its own image. At certain moments one seeks for one's contrary; one feels the necessity for antithesis. That is why Gretchen loves Carmen.—*Jean Breton.*



THE LOWER FALLS OF THE YELLOWSTONE
OTTO W. BAHL
FIRST PRIZE — AMERICAN SCENIC BEAUTIES

XUM

Speed-Pictures — Photo-Era Competition

Closes June 30, 1916

In this day when Americans are accused of being "speed-mad" it is not surprising that the speed-mania has invaded the realm of photography and driven inventors to the production of lenses and shutters that are equal to "freezing" the swiftest racing-automobile or the express-train at full speed.

The question of the art-value of such photographs is an open one. Perhaps ninety-nine out of one hundred are little more than curious — interesting as an example of the perfection of modern cameras, but lacking in pictorial value. This may be in part due to the workman's pride in his tools. He wishes to show what he can do — and he does truly marvelous things. The press-photographer's accomplishments in this line are simply wonderful, and his experiences would make interesting reading. The impossible situations in which he is required to "make good," like furnishing photographs of sporting-events in cloudy or rainy weather, or in evening-light, would daunt any but the "press-man," who has learned that to "stay with his paper" he must eliminate "impossible" from his dictionary.

The chief object in this and kindred work seems to be to "catch something doing" without much regard to what or when. If a figure can be caught in the air and so sharply defined that you can count the buttons, the stripes or the lacings, the *ne plus ultra* has been reached — regardless of the fact that the eye is incapable of recording any such picture, and that the positions are as a rule ungainly and awkward. They have the merit of being true to life, however, as the angular Remington horses are true to actuality as revealed in the instantaneous photograph, but lack that "poetry of motion" that is the spirit of such pictures as these of Schreyer. As a matter of fact, however, the latter appear to the ordinary observer to represent the facts more nearly as he sees them — for the eye does not separate the action into separate ungainly poses, but gives us the impression of swift, graceful, easy motion.

To obtain this impression of speed rather than the effect of a body miraculously sustained in mid air without motion is a very difficult thing in a photograph. Unless a sufficiently quick exposure is made blur and distortion come in to ruin our effects — and if we speed up too much at once the sense of motion is lost. The course between Scylla and Carybdis is a narrow and difficult one.

Perhaps the scarcity of really artistic photographs of this type accounts for the fact that so few are to be found in the files of Photo-Era. Most of those to be found are the ones submitted in contests, as in that devoted to "Outdoor-Sports," the winning pictures in which were published in October, 1915. The print winning first prize is a very successful one. The flying spray and wind-blown flag and garments are quite convincing. The second prize is more open to criticism, though for its kind it is unusually good. The leaning horses are well balanced by the single horse and the uprights of the building in the background — the moving feet of the horses are not needle-sharp, and on the whole the sense of action is good. But for all that, unstable equilibrium of the two horses is so obvious that one cannot avoid the feeling that it is only a miracle that keeps them from crashing to the ground. A similar competition, in 1913, January issue, brought out the print well named "Speed-Maniacs," of which the same criticism may be made.

The superiority of prints when a little longer time is given may be demonstrated by the admirable picture by Mr. Zerbe on page 138 of Photo-Era for September, 1915. The illusion of movement is well given, yet the data says six seconds' exposure. The print tells its story well, and although the figures are small the effect is even better at a little distance. The outlines are soft yet sufficiently clear. The movement in the lifted feet might easily have been disguised by retouching, but has been very wisely left untouched. Another beautiful and convincing picture — this time one really taken in $\frac{1}{100}$ of a second — is that by Dr. Sornberger, shown as winner of the first prize in April, 1915. The soft, hazy atmosphere adds much to the charm of this swiftly moving train. The pennant of smoke, and the tip of the cars as they round the curve, speak of swift motion, yet there is nothing to arouse a fear of impending catastrophe. The wheels grip the rails firmly, as one's subconscious mind demands they should. It is true as a record, and satisfies the requirements of art.

The amount of time that may be given without too great blur or distortion depends very much on the point of view. If the motion is toward or away from the camera, rather than across the field of view, exposure may be lengthened; but motion at right angles to the direction of the lens must be taken as quickly as possible to avoid distortion.

To create the illusion of motion, to convey to the brain the same impression it receives when the actual event is observed, should be the object of the pictorialist. This is not done by extreme blurriness — the elongated automobile with oval wheels; not by the needle-sharpness which enables us to read its license-number; but by the almost invariably "happy" medium, where speed is shown by softened outlines, a cloud of dust, a wind-blown pennant or garments, but no grotesque distortion.

There is a chance for difference of opinion in regard to the best equipment for speed-work. For the press-photographer and his ilk the *sine qua non* will be the Graflex, with its rapid lens and focal-plane shutter. One great advantage of this type of reflecting-camera is the ability it gives to see the full-sized image right up to the moment of exposure. A drawback is its bulk and weight, making it rather difficult to hold in position while waiting the propitious moment, and making it quite possible that it may be allowed to sag out of plumb, resulting in tipsy lines in the background.

The focal-plane shutter may be used on other types of camera, however, and is almost a necessity if very rapid movement is to be caught. A good all-around instrument is one equipped with both styles of shutter — one working between the front and rear element of the lens and one before the plate. Thus equipped one is ready for any emergency that may arise. Only beware of using one without leaving the other open — a futile and disappointing procedure.

When the action to be depicted is sure to take place at a certain place, as in races and athletic meets, a wise way is to use a tripod. Then one is more sure to choose a good position with regard to background, lighting, etc. A sharp focus can also be obtained on the desired spot, as at some hurdle or goal, and when everything is in readiness the shutter can be released at the propitious moment.

This method, though a safe and sure one, would seem rather to restrict one's activity, and the advocate of the Graflex would probably get more pictures, and among them there might be some lucky shots that would justify his arguments. The unexpected is what always happens, they say, and the Graflex-man is the one who records the unforeseen crisis.

Of course, rapid plates and slow development are the natural accompaniment of short exposures. For the

THE FINISH G. H. DAVIS, JR.

film-user, the Eastman Speed-Film provides a better basis than the ordinary roll-film, and if developed slowly in a tank, with a dilute developer, should give excellent results.

In this branch of photography, even more than in others, success depends on the "artistic sense" and the quickness of eye and brain which enable one to seize at once on a fortuitous grouping of good composition and pictorial arrangement. There is here no chance for posing and premeditation — the chance is gone almost as soon as discovered, and must be caught surely and successfully on the instant or not at all. He who hesitates is lost!

The outdoor-pageants so popular of late years offer great possibilities in their folk-dances, with picturesque costume and setting. Some very interesting things have been captured at these spectacles, and yet it is a field that will prove worthy of more cultivation.

KATHERINE BINGHAM.

Composition

To the beginner in photography who has no previous art-training the oft-reiterated advice to give heed to good composition in his pictures sometimes becomes rather irksome, but a rudimentary knowledge of the simplest rules of composition is essential to success if he aspires to the pictorial in his work.

The principle of first importance is that a picture must have one supreme interest, one thing that holds the eye, and to the supremacy of which all the rest of the picture contributes.

Another vital principle is that the picture-space should never be divided in the center. A good place for the chief division, as the horizon, for instance, is one-third of the way from either the top or the bottom of the print. It should be placed high when the chief interest is in the foreground, and low when the sky is of chief importance or the view is a broad expanse of sea or country giving the idea of wide spaces. The same space-division holds true of vertical division. If the trunks of trees cut the picture-space they should come much nearer one side of the print than the other.

The law of balance is also an important one, and one not quite so simple to apply. It might be illustrated by the steelyards, where a small weight on one side balances a much larger object on the other. So a large mass in the foreground on one side of the picture is balanced by a smaller object on the other side and farther in the distance.

There are many ways of establishing the supremacy of our chief object of interest. The simplest way, perhaps, is by leading-lines. Here, too, the center of the picture-space should be avoided, the interest placed at one side, whither all the chief lines of the picture should lead.

Suppose the interest to center in an old farmhouse, the ground should be thoroughly gone over and, if possible, a viewpoint found where the lines of a road or path start in the foreground and lead diagonally across the print to the house, located about one-third of the way from the other edge. If the line of a hill can be made to lead from the top toward the house, or a row of trees be included that lead in that direction, so much the better. Another way to secure predominance for the chief object is by contrast of color — a light object in dark surroundings or a dark object against a light-toned background, always remembering to avoid placing it too near the center of your picture-space.

In figure-compositions the triangular arrangement is always good. The head in a portrait is of course the center of interest, and lines of drapery or surroundings should converge at that point. The hands may be used to balance the face, but should be lower in tone so as not to draw the eye from the predominant interest.

All these rules conspire toward the same object — namely, that when one's print is looked at there should be no question as to what story it intends to tell; nothing must lead the eye away from that one interest, but all things should work together in harmony.

XUM

THE CRUCIBLE

A MONTHLY DIGEST OF PRACTICAL FACTS FOR PHOTOGRAPHIC WORKERS

With Reviews of Foreign Magazines, Progress and Investigation

Edited by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to The Crucible, PHOTO-ERA, 383 Boylston Street, Boston, U. S. A.

Ferrous Oxalate for Black and Sepia Prints

FERROUS oxalate as an inexpensive emergency developer, recommended in PHOTO-ERA for October, 1914, page 200, is certainly coming into wider use in England where the prices of all ordinary photographic developers are far higher than here. This is shown by the increased amount of space being devoted to it by the English photographic press, particularly *The British Journal of Photography*, from which the following extracts have been taken.

The importance of transferring gaslight and bromide prints developed with ferrous oxalate to an acetic acid clearing-bath, as described in PHOTO-ERA, previous to fixing, rather than merely rinsing them in water, is specially emphasized. To transfer them to water will inevitably cause deposit of yellowish iron compound, which will be particularly noticeable in the whites. The prints require to be passed direct from the developer into a weak acid bath, the effect of which is to keep the iron compounds in a soluble state and to allow of their being subsequently washed out before fixing the prints. On this point it is hardly necessary to say that the washing between the treatment with acid and the fixing of the prints is necessary in order to prevent acid being carried into the fixing-bath, since the presence there of either acid or iron is detrimental to the lasting-quality of the prints and the purity of the whites. Thus it will be seen that the iron developer calls for precautions which are altogether foreign to the use of an alkaline developer and entail additional operations. But if the different conditions are borne in mind there is nothing to prevent the prints possessing quality equal in every respect, if not superior, to that obtained with alkaline developers.

In working off prints in considerable number the best plan is to use a first acid bath in ample quantity — e.g., an inch or two in depth and in as large a dish as can conveniently be employed. Here the prints can accumulate until the whole lot has been developed, after which they are transferred to a second acetic acid bath of the same strength and turned over in this for five or ten minutes. They then require to be washed in plain water for 15 or 20 minutes before being fixed.

While a fixing-bath of hypo only may be used, it is, we think, preferable to add also a fair dose of sodium sulphite for the purpose of taking up traces of acid which are carried into the bath in the prints and thus to supply a safeguard against an acid condition of the fixer. Where the fixer is made up with 3 or 4 ounces of hypo for every 20 ounces of water, half an ounce or an ounce of sodium sulphite crystals will be ample for this purpose.

It cannot be too emphatically stated that cleanliness of fingers and dishes is of prime importance in using the ferrous oxalate developer. Traces of pyro and of other developers in contact with the iron developer give rise to intense dark stains, while ferrous oxalate is also a developer which is extremely susceptible to traces of hypo. The dishes in which development is done should be kept for that purpose alone, and in first taking up the use of the developer it is well to get entirely new dishes for the developing-solution itself or to pick out those free of chips or cracks in the porcelain enamel and to make them chemically clean by rinsing with spirits of salt followed by ample washing in water.

When it is the aim to redevelop for sepia tones *The British Journal of Photography* recommends a chloride bleacher previous to sulphiding instead of the usual solution of potassium ferricyanide and potassium bromide. It is probably the cheapest bleacher one can use, considering the high prices of chemicals, and obviates the trouble of blue spots sometimes met with in bleaching prints, developed with ferrous oxalate, with ferricyanide and bromide. While in theory the acetic acid baths used after the iron developer should remove all iron compounds, in practice they sometimes fail to do so, and though the small amount retained is of no consequence whatever to a black-toned print, it may be enough to give trouble if ferricyanide is applied. There is no great difficulty in removing all the iron from a gelatine film, but in a print there is more paper than gelatine, and sometimes certain spots on the paper retain iron with an avidity that defies all the acid baths we can apply. If, therefore, we are obliged to use the iron developer it is obviously safest to give up ferricyanide as a bleacher or constituent of the bleaching-bath.

So far as good tones are concerned the following chloride bleacher recommended by T. H. Greenall is probably the most reliable:

A

Hydrochloric acid, B.P., 31.8 percent	3 ounces
Water to make	20 ounces

B

Potassium permanganate	40 grains
Water to make	20 ounces

To make the working-solution, mix in the order given: Water, 6 ounces; A, 1 ounce; B, 1 ounce.

This bleacher will not keep in the mixed form, but the separate solutions keep almost indefinitely. Although it will generally leave a certain amount of brown stain on the print, this will disappear in the sulphide bath. If it does not do so absolutely the following clearing-bath applied after toning will put matters right:

Oxalic acid	½ ounce
Water	50 ounces

Add a few crystals of sodium sulphite.

It may be noted that a very marked brown stain generally denotes either that the bleacher has been made up in the wrong order or that there is an excess of either A or B.

THE SHENANDOAH VALLEY — CLARENCE TEAMER

SECOND PRIZE — AMERICAN SCENIC BEAUTIES

For some reason that is not at all clear some workers fail to get good tones with any chloride process. It is possible, however, to convert any of the chloride images produced into bromide images by simple immersion in a solution of potassium or ammonium bromide, of, say, 5- to 10-percent strength; and this is not a very extravagant proceeding, for such a bath will keep almost indefinitely. Mixed baths containing bromide do not keep so well because of the frequent deterioration of the other chemical included. On the other hand, the simple immersion of a well-washed chloride print into a bath of plain bromide does no harm to the solution. A little is lost by absorption in the paper, but a very large number of prints can be treated without materially weakening the bromide contained in the solution; hence a 10-percent solution can be used as long as enough of it remains to cover the prints.

Nothing need be said here about the sulphide bath, which, both in itself and its customary use, requires no modification whatever for prints developed with ferrous oxalate.

Workers on a large scale will no doubt be well advised to adopt hypo-alum toning under the conditions we are considering. The use of this method after ferrous oxalate cannot lead to any special troubles, while the results will probably be more satisfactory from the beginning than those obtained with unfamiliar chloride bleachers. Neither is there any particularly valid reason why the smaller workers should not adopt the same method, which is easier, more certain and far less trouble than most people imagine. Once the bath is in good order the process becomes almost automatic.

The Right Side of the Plate

As a general rule the film side of a dryplate can be determined by feeling one of the corners, for the emulsion being more or less matte on the surface is not so smooth as the glass. With some plates, however, particularly very fine-grain slow ones, there is little or no difference in the feel of the two sides, and mistakes can readily occur. It is not very advisable or in any way necessary to load slides, etc., in the full light of the safe-lamp; this is a task that can be done in the dark quite well, but, still, if a little safe light is available when wanted the question of the right side of a plate or paper can be determined with certainty. We have adopted the following system: The loading-bench is protected by a low vertical screen from light coming from the safe-lamp several feet away, and is, therefore, virtually in darkness; but over the low screen we can see the light from the lamp. If a plate is held horizontally just above the screen a reflection of the light can be seen on its surface and the glass side is at once determined by the clear reflection that it gives. The test occupies only a fraction of a second, therefore no risk is incurred. Bromide paper tested in the same fashion shows a peculiar glitter on the film side that is absent on the paper side, hence the test serves as well for it as for plates. If the lamp does not directly face the bench, a small hole can be made in the side of the lamp and covered with a safe-light. This is the case with our lamp. Quite a small aperture is sufficient, as all that is required is a beam of light directly facing the eye, and this beam may be as narrow as possible.

The British Journal of Photography.

XUM

A WINTRY DAY IN THE PARK — W. STELCIK

FIRST PRIZE — BEGINNERS' CONTEST

A Pyro "Process" Developer

Mr. A. J. Newton, of the Engraving-Department, Eastman Kodak Company, advocates the following substitute for the regular hydroquinone-caustic "process" developer, pyro now being much less expensive than hydroquinone. It will give density almost equal to the standard formula if used for a little longer time, a preferred duration and temperature being 5 minutes at 70° F.

Sodium sulphite, anhydrous	7½ ounces	75 grams
Pyro	1 ounce	10 grams
Sodium carbonate, anhydrous	2½ ounces	25 grams
Caustic soda, pure	¼ ounce	2½ grams
Potassium bromide	½ ounce	5 grams
Water to make	100 ounces	1 liter

Dissolve the sulphite in some of the water, then add the other ingredients in the order given. If it is required to keep the developer a long time it may be desirable to make up and keep the soda as a separate solution.

Pyro for Miniature Negatives

Among those enthusiasts who have been especially successful in the use of miniature cameras may be mentioned Mr. John Gordon, Jr., several examples of whose work have been reproduced in past issues of Photo-Era. Mr. Gordon is a devotee of tank-development, and ascribes much of his success to the formula he uses, which he believes tends to produce the clean-cut, fine-grain image essential for printing by enlargement. It is a slight modification of the Watkins Thermo Pyro-Soda formula, as follows:

Stock-Solutions

No. 1

Potassium metabisulphite	120 grains
Sodium sulphite, anhydrous	2 ounces
Pyro	240 grains
Water, cold, to make	15 ounces

No. 2

Sodium carbonate, anhydrous	2 ounces
Potassium bromide	60 grains
Water, hot, to make	15 ounces

The following table indicates the number of drams of each solution required for tray and tank use when made up to 3 and 10 ounces respectively for tray and tank use. The index-letters above the figures refer to Table "C," the classified list of plates of the Watkins Speed-Card for Termal Development.

V.V.R.	*V.Q.*	*Q.*	*M.Q.*	*M.*	*M.S.*	*S.*	*V.S.*
1	1⅓	1¾	2¼	3	4	5	6¾

For instance, Cramer Crown, Seed 30 and Kodak film, S; Lumière Sigma, Seed 27 and Hammer Extra Fast, M.S.; Standard Orthonon and Ansco film, M; Marion Record, V.S.

From Table "A," the temperature-table, it is ascertained that the time of development in the tray is 5 minutes at 68°, 6½ minutes at 60°, and 8 minutes at 54°. The time of development in the tank is 20 minutes at 66° and 30 minutes at 54°.

THE ROUND ROBIN GUILD MONTHLY COMPETITION

For Beginners Only

Closing the last day of every month. Address all prints to PHOTO-ERA, Round Robin Guild Competition, 383 Boylston Street, Boston, U. S. A.

Restrictions

ALL Guild members are eligible in these competitions provided they never have received a prize from PHOTO-ERA other than in the Beginners' Class. Any one who has received only Honorable Mention in the PHOTO-ERA Monthly Competition for advanced workers still remains eligible in the Round Robin Guild Monthly Competition for beginners; but upon winning a prize in the Advanced Class, one cannot again participate in the Beginners' Class. Of course, beginners are at liberty to enter the Advanced Class whenever they so desire.

Prizes

First Prize: Value $5.00.
Second Prize: Value $2.50.
Third Prize: Value $1.50.
Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

A certificate of award, printed on parchment paper, will be sent on request.

Subject for each contest is ***"Miscellaneous"***; but only original prints are desired.

Prizes, chosen by the winner, will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books.

Rules

1. These competitions are free and open to all members of the Round Robin Guild. Membership is free to all subscribers; also to regular purchasers of PHOTO-ERA on receipt of their name and address, for registration, and that of their dealer.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. ***Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. *Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.* ***Criticism on request.***

4. *Each print entered must bear the maker's name, address, Guild-number, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what contest it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. If suitable, they will be published in PHOTO-ERA, full credit being given.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

Awards — Beginners' Contest Closed February 29, 1916

First Prize: W. Stelcik.
Second Prize: James Allan.
Third Prize: Louis R. Murray.
Honorable Mention: Dr. W. G. Adams, Margaret Anderson, Edward L. Austen, Louis F. Bucher, S. S. Chojnacki, J. Louis Cunningham, T. D. Fields, V. Max Kennery, O. P. Lynum, C. A. Pierce, Mrs. H. G. Reed, H. B. Rudolph, R. C. Shultz, M. C. Still, Glenn E. Throop, William J. Wilson, Elizabeth B. Wotkyns.

Special commendation is due the following workers for meritorious prints: Howard E. Andelfinger, Marguerite Balthrope, Lamar Callicott, E. L. Clarke, Martha Curry, J. F. Eden, J. B. Gale, B. S. Grenelle, A. M. Kopcok, T. W. Lindsell, Arthur C. Link, Rudolph Motts, John A. Platt, Kenneth D. Smith.

Why Every Beginner Should Compete

THE trouble with most competitions is that they place the beginner at a disadvantage. If advanced workers be allowed to compete, beginners have little chance to win prizes, and so quickly lose interest after a few trials.

There are two monthly competitions in which prints may be entered with prizes commensurate with the value of the subjects likely to be entered. They are: The Round Robin Guild Competition and the PHOTO-ERA Competition. The former is the better one for a beginner to enter first, though he may, whenever it pleases him, participate in the latter.

As soon as one has been awarded a prize in the PHOTO-ERA Competition, he may consider himself an advanced worker, so far as PHOTO-ERA records are concerned, and after that time, naturally, he will not care to be announced as the winner of a prize in the Beginners' Class, but will prefer always to compete in the PHOTO-ERA Competition for advanced workers. In accordance with this natural impulse, it has been made a rule by the Publisher that prize-winners in the Advanced Class may not compete in the Beginners' Class.

To measure skill with other beginners tends to maintain interest in the competition every month. Competent judges select the prize-winning prints, and if one does not find his among them there is a good reason. Sending a print which failed to the Guild Editor for criticism will disclose what it was, and if the error be technical rather than artistic, a request to the Guild Editor for suggestions how to avoid the trouble will bring forth expert information. The Round Robin Guild Departments, including those of personal counsel and criticism, form an endless chain of advice and assistance if members will connect the links.

THE ROUND ROBIN GUILD

An Association of Beginners in Photography

Conducted by KATHERINE BINGHAM

This association, conducted under the auspices of PHOTO-ERA, and of which PHOTO-ERA is the official organ, is intended primarily for the benefit of beginners in photography. The aim of the association is to assist photographers by giving them information, advice and criticism in the Guild pages of PHOTO-ERA and by personal correspondence. Membership is free to subscribers and regular purchasers of the magazine sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston, U. S. A.

Making the Most of Photographic Magazines

In this present day of "efficiency-systems" the photographic amateur who struggles on by himself making repeated failures without knowing why or wherefore has only himself to blame, for the knowledge and experience of those who have met and solved the same problems are freely his through the agency of the photographic magazines.

In nearly all of these, as in PHOTO-ERA, much space is given each month to the needs of the beginner in photography. Articles are printed dealing with the various problems he is apt to encounter, contests are held where he can send his prints in competition with others from workers of his own standing, and in every way the effort is made to smooth out the rough places in the road he is traveling.

Take the always-difficult matter of exposure. In PHOTO-ERA each month is an exposure-guide that gives valuable aid and covers almost any circumstances. A good way to make the most of these tables is to cut them out and mount them on five cards, cutting them into pieces to fit about a 4 x 6 mount. The table of plate-speeds is the only one that will not fit this size, and the last column of this may be on a separate card. These can then be fastened together and kept in the camera-case, so as to be always at hand when needed.

A good way to cultivate an appreciation of art-principles as well as technique is to look critically at the illustrations in the magazine, and if a picture is pleasing, determine what it is that makes it so; if unsatisfactory, try to locate the trouble. Then, having determined what your estimate of the picture is, turn to the back of the magazine and see if your verdict is that of the Editor, whose comments, under "Our Illustrations," will be found very helpful.

But it is not only the printed pages of the magazine which may be helpful to the novice. Criticism of the work of others, instructive though it may be, is of little value compared to discriminating comment on one's own efforts — and this the magazine stands ready to give. If your best efforts fail to give you desired results, then select some specimen-prints showing what you have tried to do and wherein you have failed of accomplishment, and some one of the editorial staff stands ready to point out to you where you have made your mistake and what you can do to improve present results, as well as how to make your future efforts come nearer to your ideal.

Having brought up your standard to the point where you are willing to try your strength against others of your own degree of experience there is open to you the monthly contest for beginners. In sending in prints for this contest, if a request and a stamp are sent with the entry, your prints will be returned with criticisms which will perhaps show you why you did not win the prize, and help you to carry it off eventually. Then aside from the print-criticism there is the "letter-box," where any query pertaining to any branch of photography will be answered as helpfully as possible. This should be an invaluable aid to the solitary worker if he would only avail himself of its privileges.

A great help in making magazine-literature easily accessible is to make a card-catalog of articles to which it may be desirable to refer in the future. When one subscribes for two or three magazines it not infrequently happens that when an emergency arises one has the feeling that something has recently been read that would help one out of the difficulty if it could only be found; but the task of looking over files of old magazines, with no definite idea of when or what in, is too hopeless, and that which is unavailable might as well be non-existent.

The making of the catalog is very simple and puts much valuable information within easy reach. When an article is read that gives practical information on any subject, make as many cards for it as its contents seem to require. For instance, take Mr. E. J. Wall's article on sepia-tones in PHOTO-ERA for February. This should be indexed under several heads. Make one card-heading to read Sepia Tones on Developing-Paper. Another should read Developing-Paper, Sepia Tones on. In the last paragraph on page 59 is described a method of obtaining red tones — so two other cards should be made out giving this reference under Red Tones. Other cross-references might be made under Hypo-Alum Formulas, or any one of several others to which one feels that he may wish to refer.

If this is done for each magazine before it is filed away one will soon have a catalog for which one would not take many times its value.

These are some of the many ways in which one can make use of the photographic magazines of the day with great profit to one's self and one's work.

Transparencies

No paper-print comes so near to reproducing the delicate beauties of one's favorite negative as does the glass-transparency. To the beginner, perhaps, the making of transparencies looks like a task beyond his abilities, but any one who makes his own prints on developing-paper can, with only a little extra care and trouble, make satisfactory prints on glass.

The first requirement, after a good negative, is the slow transparency-plate. These can be had coated on ground-glass, and as one must have the ground-glass to bind with the transparency if made on clear glass it is advisable to procure it in the plate.

A light that is safe for the developing of paper may be too strong for the plates, so it is well to shield it with an extra thickness of orange paper before experimenting.

XUM

SECOND PRIZE
BEGINNERS' CONTEST

MOTHER'S DARLING JAMES ALLAN

The formula for developer that is inclosed with the brand of plate you procure is the best to use, for each manufacturer knows his own plate and what will give best results with it.

The exposure must be to artificial light, and will be much shorter than for the paper-print. Place the dull side of the plate (if on clear glass, otherwise the smoother side) in contact with the face of the negative, in the printing-frame, being sure that the edges of the plates are parallel, and carefully clamp the back in place. Exposure with an ordinary negative at a distance of seven or eight feet from a 16- candle-power electric light should be possibly 10 or 15 seconds, but so many things enter into the calculation of exposure that it is hard to give even an approximate time.

It is a great addition to the looks of the finished product if a mask is used to give a clear white, even margin to the plate. If negative and plate are the size of the printing-frame used, and are carefully adjusted therein, the rebate of the frame will answer the purpose; but the safer way is to cut very carefully a mask of the proper size to give an even, clear-cut white edge. This may be lightly attached to the negative, so that only the plate will have to be adjusted by the faint light allowable in loading.

The exposure should be such that the image will appear in a few seconds and reach full depth rather quickly. The distance that the frame is held from the light in printing will vary the amount of contrast, the contrast increasing with the distance. The finished print should be full of detail in both highlight and shadow, and sufficiently light in tone to allow all shadow-detail to be seen.

Several kinds of inexpensive holders are on the market, and are almost a necessity, though it is, of course, possible to improvise means of showing them. If ground-glass plates have been used, a clear glass must be placed over the face of the print and bound with it. If clear glass is the foundation then a finely ground glass must be placed over the face. The two glasses may be bound together with strips of ribbon or cloth, to which a cord is sewn for suspending the whole.

Give your pet negative a chance to show its beauties in this way.

There Was a Reason

Interested amateur —"What became of that beautiful color-print made by your process you showed me several years ago?"

Color-photography expert —"Oh, that got so torn and used up from frequent showing that I had to throw it away. (*Mournfully*) It was the only good one I ever made."

Answers to Correspondents

Subscribers and regular readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to Correspondence Department, PHOTO-ERA, *383 Boylston Street, Boston, U. S. A. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.*

D. P. F.— **The red chalk tones** you so much admire are not the result of using a special paper, but are obtained by toning Cyko prints. The ordinary black print is first toned to sepia by the well-known hypo-alum method, formulæ for which will be found in almost any handbook. After washing thoroughly, to eliminate all traces of hypo, the print is immersed in the following salt bath:

Sodium chloride	1 ounce
Water	32 ounces

While this bath does not influence the final tone obtained, it is advisable in that it retards the toning-action somewhat and allows the gold to be selectively and evenly deposited when the print is subsequently immersed in the toning-bath, prepared as follows:

A

Water	15 ounces
Gold chloride	15 grains

B

Water	15 ounces
Potassium sulphocyanate	90 grains

Add one slowly to the other, stirring slowly meantime, so as not to precipitate the gold. This quantity will tone 75 prints 4 x 5, or an equivalent surface. Toning requires about ten minutes, after which transfer to an acid fixing-bath for twenty minutes, and then wash in the usual manner.

J. G. W.— **Failure to include wood-alcohol in the metol-hydroquinone developer** on page 89 of PHOTO-ERA for August, 1914, may cause difficulty in winter. The solution being considerably concentrated, it will partially crystallize if kept in a cold place. The addition of a proper amount of alcohol, and raising the temperature to 65 degrees, will re-dissolve the salts.

The slowness of working is also due, no doubt, to a low temperature. In winter there is always danger that trays and solutions will be too cold unless one works in a room that is always warm, or unless special precautions are taken. A paper-developer should be used, preferably at 70 degrees, and never cooler than 65. It is well to have a thermometer constantly in the tray.

The use of reflectors with an upright type of enlarger is somewhat difficult. Probably you will use opal glass or a condensor for diffusion. In either case we suggest a cluster of three or four burners in one fixture.

W. T. L.— **The grayish tone of your print** 1 may be due to any one of several causes; forcing the development might cause it, although it is more likely the result of too little bromide in the solution. It is possible, also, that the paper may be a little stale. This might also, in a measure, explain the small, round black spots. Some of these, however, appear more likely to have been caused by transparent spots in the negative.

Probably, as you say, the redeveloper is at fault in getting the sepia tone you wish. Of course, each brand of paper gives a slightly different tone in redevelopment, as it does in hypo-alum toning, and it is necessary to try out several and select the one giving the tone which happens to appeal most to you.

The other subjects you send are of good quality, although somewhat lacking in concentration of interest; 3 might be lighter to good advantage, and 6 is on too rough a paper for the size of the print.

O. W. J.—**An acid fixing-bath** suitable for both negatives and prints, and which employs all salts instead of including liquid acetic acid, is as follows:

Water	64 ounces
Hypo	16 ounces
Sodium sulphite, anhydrous	1 ounce

When fully dissolved add the following hardener:

Powdered alum	½ ounce
Citric acid	½ ounce

As to your **light for enlarging,** it is difficult to advise you definitely without knowing the exact type of enlarger you are using. Of course there are to be had clusters of three and four Welsbach burners, both upright and inverted, if you must continue to use gas. If electricity is available, the new Nitrogen Mazda lamp with a concentrated filament is excellent for an enlarger having condensing-lenses. The electric arc is most commonly used by professional enlargers.

A WINDY DAY — LOUIS R. MURRAY

THIRD PRIZE — BEGINNERS' CONTEST

Print-Criticism

Address all prints for criticism, enclosing return-postage at the rate of one cent for each two ounces or fraction thereof, to Correspondence Department, PHOTO-ERA, *383 Boylston Street, Boston, U. S. A. Prints must bear the maker's name and address, and be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop used, exposure, developer and printing-process.*

H. T.— Your picture of a garden-scene is filled with life; but from an artistic viewpoint white shirt-waists do not appear to advantage in a landscape against dark foliage. If the shirt-waist of the young girl in the foreground could be softened, either by reduction of the negative or by some other means, it would look much better, as, at present, the contrast between the dark shadows and the white dress-material is too marked.

O. B. H.— In your portrait of a child, the hands alone are in focus, which shows that the lens is out of focus for the rest of the picture. Besides, the normal human eye is distracted by viewing the picture of the child (ignoring the hands). Your lens, of the soft-focus variety, needs to be used more carefully.

DR. O. H.— Your night-picture appears to be simply a print from an underdeveloped plate; for, at 5 o'clock P.M., particularly where water reflects considerable light, the row of buildings at the right cannot but show a large amount of detail, which, in an underdeveloped plate, is entirely suppressed. The sense of illusion is not present. This is always the case when the exposed negative — provided it has been properly timed — does not receive adequate treatment; although, in your case, the view itself may be underexposed.

P. W. W.— The portrait is good in some ways, but the gloved hands and dress are more conspicuous than the face. The matter of light and dark is simply reversed. Besides, in a portrait of this kind, white gloves are somewhat out of harmony, and a dark or medium-colored shirtwaist would have been better. An outdoor background does not harmonize with an indoor-portrait. It would have been better, in this instance, had the chin of the sitter been dropped a trifle, in order to conceal the nostrils. The eyes, in this pose of the head, should have been directed toward the lens.

H. M. W.— To avoid distortion in portraiture, use a lens with focus at least as long as the diagonal of your plate. A soft-printing paper is better for a contrasty negative.

L. C.—"Sturtevant's Fall." The rocks, right and left of the waterfall, which is a small one, are bathed in sunlight, and produce scattering masses of glaring white; whereas the water of the falls is too dark. The picture is somewhat of a paradox, as the water should be white and the rocks subdued in tone. This picture should be taken at a different time of day, when the direction of the light is changed, so as to emphasize the falls and allow the rocks to assume their natural tone.

C. L.—"In the Canyon." This picture, with a pool of water in for foreground, surrounded by rocks upon which the sun is shining with full force, constitutes an attractive camera-subject. The trees growing around the rocks are very well rendered, and the entire arrangement of pool, rocks and trees constitutes a very promising picture. I should advise you to try this scene again, but when the light is different. An afternoon-light, or a day when the sun is not shining very brilliantly, might yield a more artistic result.

J. H. W.— We quite concur with the suggested criticisms you offer about your print, and find little to add. The lack of gradation and texture in the dress of the child is particularly unfortunate. While undoubtedly due in a measure to overdevelopment, it is also, perhaps, the result of too strong lighting, which might have been mitigated by less concentration or the introduction of a diffusing-medium, such as cheese-cloth.

The objections to large hair-ribbons are that they break the natural lines of the head, and, as in this instance, when the ribbon is light, introduce a large and conspicuous spot of higher key than the face, to the detriment of unity.

It is common practice to modify the development of portraits somewhat. Thus you need not so much a new developer as an adjustment of the one you have. Let me suggest that you either reduce the time of development, say one-fourth, or reduce the strength of the solution that much by using less stock-solutions or more water, as proves most convenient. A trial will give you a basis to work from, and if the modification is too great try one-fifth or one-sixth. But print your negatives before judging them, for surprisingly thin portrait-negatives frequently yield excellent prints.

"WHO DID THAT?" M. C. STILL

HONORABLE MENTION — BEGINNERS' CONTEST

Photo-Era Exposure-Guide

Calculated to give Full Shadow-Detail, at Sea-Level, 42° N. Lat.
For altitudes up to 5000 feet no change need be made. From 5000 to 8000 feet take ¾ of the time in the table. From 8000 to 12000 feet use ½ of the exposure in the table.

Exposure for average landscapes with light foreground, river-scenes, light-colored buildings, monuments, snow-scenes with trees in foreground. For use with Class 1 plates, stop F/8, or U. S. 4. For other plates, or stops, see the tables on the opposite page.

*These figures must be increased up to five times if the light is inclined to be yellow or red.
†Latitude 60° N. multiply by 3; 55° × 2; 52° × 2; 30° × ¾.
‡Latitude 60° N. multiply by 2; 55° × 2; 52° × 1½; 30° × ¾.
¶Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.
§Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.

HOUR	MONTH AND WEATHER																					
	JAN., NOV., DEC. †					FEB., OCT. ‡					MAR., APR., AUG., SEPT. ¶					MAY, JUNE, JULY §				
	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull
11 A.M. to 1 P.M.	1/32	1/16	1/8	1/4	1/2	1/32	1/16	1/8	1/4	1/2	1/50	1/25	1/12	1/6	1/3	1/60	1/30	1/15	1/8	1/4
10–11 A.M. and 1–2 P.M.	1/25	1/12	1/6	1/3	2/3	1/25	1/12	1/6	1/3	2/3	1/40	1/20	1/10	1/5	1/2	1/60	1/30	1/15	1/8	1/4
9–10 A.M. and 2–3 P.M.	1/12*	1/6*	1/3*	2/3*	1*	1/16	1/8	1/4	1/2	1*	1/40	1/20	1/10	1/5	1/2	1/60	1/25	1/12	1/6	1/3
8–9 A.M. and 3–4 P.M.						1/5*	1/2*	1*	1 1/2*	3*	1/30	1/15	1/8	1/3	2/3	1/30	1/15	1/8	1/4	1/2
7–8 A.M. and 4–5 P.M.											1/20	1/10	1/5	1/2	3/4	1/20	1/10	1/5	1/3	2/3
6–7 A.M. and 5–7 P.M.											1/15*	1/8	1/2*	3/4*	1*	1/15	1/8	1/4	1/2	3/4
5–6 A.M. and 6–7 P.M.																1/10*	1/5*	1/3*	2/3*	1 1/2*

The exposures given are approximately correct, provided the shutter-speeds are accurately marked. In case the results are not just what you want, use the tables merely as a basis and increase or decrease the exposure to fit the conditions. Whenever possible keep the shutter-speed uniform and vary the amount of light when necessary by changing the stop. Focal-plane shutters require only one-third of the exposures stated above.

SUBJECTS. For other subjects, multiply the exposure for an average landscape by the number given for the class of subject.

1/8 Studies of sky and white clouds.

1/4 Open views of sea and sky; very distant landscapes; studies of rather heavy clouds; sunset- and sunrise-studies.

1/2 Open landscapes without foreground; open beach, harbor- and shipping-scenes; yachts under sail; very light-colored objects; studies of dark clouds; snow-scenes with no dark objects; most telephoto-subjects outdoors; wooded hills not far distant from lens.

2 Landscapes with medium foreground; landscapes in fog or mist; buildings showing both sunny and shady sides; well-lighted street-scenes; persons, animals and moving objects at least thirty feet away from the camera.

4 Landscapes with heavy foreground; buildings or trees occupying most of the picture; brook-scenes with heavy foliage; shipping about the docks; red-brick buildings and other dark objects; groups outdoors in the shade.

8 Portraits outdoors in the shade; very dark near objects, particularly when the image of the object nearly fills the plate and full shadow-detail is required.

16 to 48 Badly-lighted river-banks, ravines, glades and under the trees. **Wood-interiors** not open to the sky. **Average indoor-portraits** in a well-lighted room, light surroundings.

PLATES. When plates other than those in Class I are used, the exposure indicated above **must** be multiplied by the number given at the head of the class of plates.

For Perpetual Reference

As all the figures in the table opposite are based upon the use of stop F/8, or U. S. 4, it does not appear here among the ratios for other stops.	For other stops multiply by the number in the third column		
	U. S. 1	F/4	× 1/4
	U. S. 2	F/5.6	× 1/2
	U. S. 2.4	F/6.3	× 5/8
	U. S. 3	F/7	× 3/4
	U. S. 8	F/11	× 2
	U. S. 16	F/16	× 4
	U. S. 32	F/22	× 8
	U. S. 64	F/32	× 16

Example

The factors that determine correct exposure are, first, the strength of light; second, the amount of light and dark in the subject; third, speed of plate or film; fourth, the size of diaphragm used.

To photograph an average landscape with light foreground, in Feb., 2 to 3 P.M., bright sunshine, with plate from Class 1, R. R. Lens, stop F/8 (or U. S. 4). In the table look for "Hour," and under the column headed "Bright Sunshine," note time of exposure, 1/16 second. If a smaller stop is used, for instance, F/16, then to calculate time of exposure multiply the average time given for the F/8 stop by the number in the third column of the table for other stops, opposite the diaphragm chosen. The number opposite F/16 is 4. Multiply 1/16×4=1/4. Hence, the exposure will be 1/4 second.

For other plates consult the table of plate-speeds. If a plate from Class 1/2 be used, multiply the time given for average exposure, F/8 Class 1, by the number of the class. 1/16×1/2=1/32. Hence, the exposure will be 1/32 second.

Speeds of Plates on the American Market

Class-Numbers. No. 1, Photo-Era. No. 2, Wynne. No. 3, Watkins

Class 1/3, P. E. 156, Wy. 350, Wa.
Ilford Monarch
Lumière Sigma
Marion Record
Seed Graflex
Wellington Extreme

Class 1/2, P. E. 128, Wy. 250, Wa.
Ansco Speedex Film
Barnet Super-Speed Ortho.
Central Special
Cramer Crown
Eastman Speed-Film
Hammer Special Ex. Fast
Imperial Flashlight
Seed Gilt Edge 30
Wellington 'Xtra Speedy

Class 3/4, P. E. 120, Wy. 200, Wa.
Barnet Red Seal
Cramer Instantaneous Iso.
Defender Vulcan
Ensign Film
Hammer Extra Fast, B. L.
Ilford Zenith
Imperial Special Sensitive
Paget Extra Special Rapid
Paget Ortho. Extra Special Rapid

Class 1, P. E. 111, Wy. 180, Wa.
American
Ansco Film, N. C.
Atlas Roll-Film
Barnet Extra Rapid
Barnet Ortho. Extra Rapid
Central Comet
Imperial Non-Filter
Imperial Ortho. Special Sensitive
Kodak N. C. Film
Kodoid
Lumière Film and Blue Label
Marion P. S.
Premo Film-Pack
Seed Gilt Edge 27
Standard Imperial Portrait
Standard Polychrome
Stanley Regular
Vulcan Film
Wellington Anti-Screen
Wellington Film
Wellington Speedy
Wellington Iso. Speedy

Class 1 1/4, P. E. 90, Wy. 180, Wa.
Cramer Banner X
Cramer Isonon
Cramer Spectrum
Defender Ortho.
Defender Ortho., N.-H.
Eastman Extra Rapid
Hammer Extra Fast Ortho.
Hammer Non-Halation
Hammer Non-Halation Ortho.
Seed 26x
Seed C. Ortho.
Seed L. Ortho.
Seed Non-Halation
Seed Non-Halation Ortho.
Standard Extra
Standard Orthonon

Class 1 1/2, P. E. 84, Wy. 160, Wa.
Cramer Anchor
Lumière Ortho. A
Lumière Ortho. B

Class 2, P. E. 78, Wy. 120, Wa.
Cramer Medium Iso.
Ilford Rapid Chromatic
Ilford Special Rapid
Imperial Special Rapid
Lumière Panchro. C

Class 3, P. E. 64, Wy. 90, Wa.
Barnet Medium
Barnet Ortho. Medium
Cramer Trichromatic
Hammer Fast
Ilford Chromatic
Ilford Empress
Seed 23
Stanley Commercial
Wellington Landscape

Class 5, P. E. 56, Wy. 60, Wa.
Cramer Commercial
Hammer Slow
Hammer Slow Ortho.
Wellington Ortho. Process

Class 8, P. E. 39, Wy. 30, Wa.
Cramer Contrast
Cramer Slow Iso.
Cramer Slow Iso. Non-Halation
Ilford Halftone
Ilford Ordinary
Seed Process

Class 100, P. E. 11, Wy. 3, Wa.
Lumière Autochrome

XUM

OUR ILLUSTRATIONS

WILFRED A. FRENCH

We are indebted to William Shewell Ellis, who has been so frequently and deservedly awarded the first prize in the Eastman Kodak Company's prize-competitions. An analysis of these successful pictures shows that they impressed the jury because of their freshness of idea, directness of appeal and clarity of presentation. The charm of youth, too, is a potent factor in Mr. Ellis's pictorial efforts, and one notices that good-looking models play an important part in this artist's compositions. These remarks apply to the caprice which decorates the front cover and page 219 of this issue. The oddity of arrangement — the result of chance rather than of intent, perhaps — is the rectangular design, which, while unconventional, may not possess the grace of line of other achievements by Ellis. But, whereas the pose is eminently pleasing, we regret that the left eye appears to have been slighted — an unfortunate shortcoming in the average photographic profile of to-day, and which is a detail to which the old masters in photographic portraiture gave due attention. This important matter has engaged my pen so often in these pages that I think it best to let it rest for awhile. No data, except that the picture was made with a regular professional equipment in the artist's professional studio.

Again we have the pleasure to favor our readers with a product of the studio of L. L. Higgason. See frontispiece. This time it is a genre, and a pleasing one. Like all the subjects from this young and progressive artist that have appeared in Photo-Era, this picture exhibits an appreciation of the pictorial possibilities with comely and intelligent models, also brilliant technical ability. As this is a genre — a story-telling picture — and not a portrait, it is not absolutely necessary that there should be a singleness of pictorial interest. The eye may pass from the fine features of the young girl to the tempting basket resting on her lap; and all is well. It is clearly the work of a well-trained professional worker and is praiseworthy throughout. Data: 8 x 10 studio-equipment; 14½-inch portrait-lens, used at full opening; F/4.5; large north window; 8 x 10 Hammer plates; pyro; 8 x 10 prints.

The work of William S. Davis, the always reliable illustrator of his practical and instructive essays, is so pleasingly familiar to his readers that comment here is not necessary. See pages 211–215. Data: "Sunlit Woods;" page 212; bright August day; stop, F/11; Ideal Ray-Filter; 1 second; Inst. Iso. "Forest-Shadows;" November; good sunlight; 11.45 A.M.; Ideal Ray-Filter; Cramer Portrait-Iso; stop, F/8.

In admiring the fragment of the arched cloisters of "Old Capistrano"— page 222 — with its fascinating effect of sunlight and shadow, many a reader will recall the buildings, in imitation of the old Spanish Missions in California, which he saw at the exposition of San Diego. I wonder if these temporary structures would not have gained in picturesqueness had the ruined appearance of the original missions been reproduced. The corner of the San Juan Capistrano Mission, which is in a state of ruin and decay, is a better subject for artistic treatment, pictured by H. P. Webb, than the new and finished mission structures at the San Diego Exposition. Data: Ansco view-camera, 8 x 10; Zeiss Protar wide-angle, F/20; May, just before sunset, bright light; exposure with cap, about 2 seconds; Hammer Non-Hal. Ortho.; Edinol; Azo Grade B Hard.

In his "Three Wonderlands of the American West," Thomas D. Murphy says: "California has in her ruined missions and old Spanish traditions a touch of human antiquity that lends an added charm to this enchanted land. The atmosphere of sacred romance that hovers around England's abbeys is not lacking in the moss-grown, vine-covered ruins that are found in so many delightful spots in the Sunset State. The story of the mission is a fascinating one, from its inception in zeal and poverty and rise to affluence to its decadence and final abandonment."

Genuine, refined, artistic taste and admirable workmanship mark the work of H. R. Decker. His still-life "Apples," in Photo-Era for June, 1915, was one of the best things of the kind that ever appeared in this magazine. The decorative panel, "African Daisies," page 224, is a masterpiece. Though a common subject it appears here as a thing of exquisite beauty, gracefully balanced, true in color-values and refined in treatment. Would that others fond of photographing flowers would study Mr. Decker's unpretentious but highly successful arrangement and take its lesson to heart. Data: August, 11 A.M.; sun; indoors, 3 feet from window covered with cheesecloth; 5 x 7 Korona view-camera; 8-inch R.R. lens; stop, U. S. 8; 5-time Isos color-screen; 12 minutes; Cramer Isonon; A. B. C. Pyro; ½ normal strength; 5 x 7 print on Professional Studio Cyko.

H. L. Bradley, who occasionally contributes some delightful bit of scenery of Mount Desert Island, off the coast of Maine, is represented on page 225 by a glimpse of Frenchman's Bay. On this day a strong blow from the East ruffles the waters of the bay and drives them shoreward. Mr. Bradley knows the value of an interesting foreground in a photographic view, as exemplified in his "Windy Day." Data: October, 2 P.M.; sun; 5 x 7 Korona camera; 10-inch Voigtländer; stop, F/8; $\frac{1}{5}$ second; 5 x 7 Orthonon; pyro-soda; 5 x 7 print on Professional Cyko.

William Ludlum, Jr., is familiar to Photo-Era readers by the realism of his camera-effects. Like most progressive workers, and satisfied with his success as a technician, he is breaking away from conventional literalness and imparting something of the imaginative to his work, thus adopting the standard of the interpreter. This pleasing change is noticeable in his view of Mt. Utsayantha, in New York State, page 226. Instead of representing the locality with perfect reflections, as many amateur workers delight to do, Mr. Ludlum chose a time when picturesquely more favorable conditions prevailed, utilized a friendly foreground and, particularly, a near, graceful tree, and produced a picture replete with pictorial charm. Data: August, 3 P.M.; bright sun; 5 x 7 Premo; 6¾ inch Velostigmat; stop, F/16; 6-time color-screen; 1 second; Orthonon plate; pyro; 5 x 7 Cyko Glossy Soft; Duratol.

Among picture-yielding localities of Greater Boston none is more productive than the region known as "Back Bay Fens." The basis is new-made land through which the waters of Muddy River are allowed to course until they find an outlet into the Charles.

XUM

New vegetation of trees and shrubs mingles picturesquely and freely with the eccentric progress of the stream; beds of flowers have been laid by a wise and generous municipality; rustic bridges span the errant waters, upon which glide rare species of water-fowl; tree-fringed roads and residential streets intersect the district, at whose western extremity rises a magnificent array of civic, ecclesiastic and residential buildings. Appreciating this wealth of camera-material, and equipped with artistic ability and discriminating judgment, an amateur worker, Ernest H. Washburn, visited here frequently last autumn and successfully exposed several dozen plates. The interesting character of this series of prints is exemplified by "A Fenway Vista," page 228. Foliage, water, sky and architecture are here merged into a delightfully harmonious ensemble. The reflections are not objectionably obtrusive, the water is normally brilliant, the foliage sanely clear and the architectural background, with a beautiful sky, terminating a well-ordered and animated composition. Data: October, 4.30 P.M.; clear, but sun behind cloud; R. B. Cykle Graphic 5 x 7; 11½-inch Zeiss Protar; stop, F/16; no color-screen; ¼ second; Orthonon; Eastman pyro tank-powder; developed 18 minutes at 68° F. in tank; 5 x 7 Azo D Hard for reproduction.

The embryonic baseball star looking eagerly for an engagement, as pictured by Horace W. Leeds, page 230, appeals directly to every reader with sporting-blood in his veins. The earnest expression of the youngster, his size and attire, and the disproportionate size of the bat constitute a picture of pathetic interest. The technique is unmistakably excellent. No data.

The episode of Manila, pictured on page 231, proceeds from the camera of a clever artist in America's Easternmost possession. Mr. Squires has been very successful in practising his hobby in a climate that is very trying. The pictorial proportions and the management of chiaroscuro of his picture are admirable, and proclaim the artistic and technical ability of a master-worker. No data.

No technically finer photographs of lepidoptera than those produced by Edwin A. Roberts, pages 232-234, have ever appeared in this magazine. The tonal beauty of the original prints is superb.

The Photo-Era Monthly Competition

It may be proper to admit, at the beginning, that the competition "American Scenic Beauties" failed to yield entries that were satisfactory in character. Most of them were subjects of local importance and without a special degree of beauty. There were not a few familiar subjects of national interest, but done in a hasty, perfunctory way. This accounts for the absence of one of the prize-awards and the paucity of awards in the Honorable Mention class.

The Lower Falls, in the Yellowstone National Park, page 237, is less familiar than the Upper Falls, but it forms a magnificent spectacle. The viewpoint chosen by Mr. Bahl yields a picture of unconventional beauty and convincing impressiveness, although the gray tonal effect of the print does not appear to compensate the lack of depth and brilliance one expects to find in a subject of this kind. Data: August, 1913; Goerz 4 x 5 Ango camera; 6-inch Dagor lens; F/6.8; Premo film-pack, bright light; no data as to stop, time or exposure; enlarged from part of negative on Enlarging-Cyko Buff.

"The Shenandoah Valley," page 241, is a welcome contribution to these pages, not only on account of its marked, artistic beauty, but of its historic importance. This country, in Virginia, is filled with landmarks and associations of the American Revolution and the Civil War, and, best of all, is teeming with delightful camera-material, as evidenced by Mr. Teamer's engrossing and successful composition. The picture, "Harper's Ferry," was taken from a high point known as Jefferson's Rock, and shows both Virginias — West Virginia in the foreground and Virginia to the right of the view. Data: August 22, 1915; cloudy, but bright; 7½-inch Turner-Reich Anastigmat; stop, F/22; 2-time ray-filter; 1 second; 5 x 7 Cramer Inst. Iso; pyro; clouds reduced slightly; reduced negative made from contact positive, as Mr. Teamer's enlarger would not take larger than 3¼ x 4¼ plate; enlargement on Enlarging-Cyko Studio; exposure, 70 seconds.

The Beginners' Contest

"A Wintry Day," page 242, captivates the beholder by reason of its novelty of subject and beauty of treatment. The composition is eminently artistic, and the color-values are admirably truthful. Mr. Stelcik is to be complimented for achieving a result so brilliantly successful. Data: January, 1916; sunlight; 5 x 7 Conley camera; R. O. lens; Conley Safety shutter; stop, F/64; ray-filter; 1 second; Ortho plate; pyro in tray; 5 x 7 print on Azo B.

The engaging home-portrait of a little boy, page 245, appealed to us successfully because of the simple and unaffected pose, the excellent technique including the true rendering of the flesh-tints and the absence of distracting accessories, such as bright hair-ribbons or grotesque-looking toys. Data: February, 1916, 1 P.M.; medium light outdoors; 5 x 7 view-camera; 9-inch Verito; stop, F/8; 1 second; Seed 27; Duratol; Special Carbon Velox. Enlargement.

The refined and delicate character, as well as the original beauty of the subject — so appropriate in a small, direct print — constitute the charms of Louis R. Murray's successful effort, page 246. The effect of the strong wind is convincing, and without sacrifice to important detail. Data: November, 1915, 3.15 P.M.; good sunlight, swift clouds and heavy wind; 5 x 7 Premo; 9½-inch B. & L. R. R.; stop, U. S. 16; Ingento C. color-screen; approximately 1 second; Standard Orthonon plate; hydro-duratol; direct 5 x 7 print.

The little genre, page 247, is a bit of child-life, a department in amateur work of which we should like to see more evidences. This class of work may call for an unusual degree of skill, patience and resourcefulness; but it will certainly repay the time and effort. All will agree that the conception, management and lighting of Mr. Still's picture are admirable, with the possible exception of the background, which slightly obtrudes itself. But this was unavoidable on account of limited quarters. Data: 5 x 7 Premo; 8½-inch R. R.; stop, U. S. 8; flashlight; 5 x 7 Cramer Crown; Rytol; direct print on Aristo Platino; toned with toner.

The military picture, page 255, is as admirable a piece of work as it is timely and — welcome. It is an impromptu snapshot by W. F. Turner, Jr., the popular manager of the photo-department of the Pinkham & Smith Company, Boston. The original print is an enlargement made with a new and brilliant enlarger sold by this firm; but more of this in the June issue. Data: October, 1915, 2.30 P.M.; 4 x 5 Auto Graflex; 6-inch Zeiss 1 C, F/4.5; used at full opening; good light; $\frac{1}{75}$ second; Cramer Crown; hydro-metol; 10 x 12 print on Enlarging-Cyko with P. & S. Bromide Illuminator.

Ideas of healthy democracy have facilitated independent opinion in matters of art. Art-criticism has not now its former pedantic tone. It misinforms the public, but it condemns nobody to death — *Ary Renan.*

ON THE GROUND-GLASS

WILFRED A. FRENCH

Increasing Prices of Photo-Specialties

No worker, when looking on the Ground-Glass, likes to see objects distorted or abnormal. Unfortunately, instead of normal prices for photographic chemicals and certain other indispensable specialties, the Ground-Glass reveals greatly increased and almost prohibitive prices. I have received a number of letters in which the writers complain of this deplorable state of affairs. Some of them criticize their dealers for advancing prices arbitrarily, believing that they should not try to take unfair advantage of the consumer, but sell their stock of scarce chemicals at ante-bellum prices until it is exhausted. Of course, in cases where dealers are obliged to pay more for a certain class of goods, they are justified to charge an advance, but only in just proportion to the increased price.

There is much to be said in defense of the policy of dealers in selling such almost unobtainable chemicals as metol, eikonogen and ferricyanide. It would be easy for easy-going dealers to sell to some "far-sighted" photographer more stock than he could consume in several years, merely to enable him to speculate with it. But at the same time, such dealers would be depriving actual consumers — some of their best customers — of a legitimate supply of such a necessity as metol, now scarcely to be had.

It therefore behooves the dealer to handle such a condition with prudence and justice; for if he show a tendency to be avaricious, favoring a speculator at the expense of a regular customer, he will lose more than gain in the end. Instances of rapacity along this line have been reported to me by displeased workers, who have avowed their intention to give their patronage only to fair-minded dealers.

The Measure of the Art-Critic

It is, indeed, remarkable that, amid all the sanguinary horrors on land and sea, and in the air, and in view of the threatened decline of British supremacy, our friend "The Walrus" bobs up every week as cheerful and merry as if there were no such word as "war." His is the orchestra whose merry strains reassure the audience and avert a panic. One of his recent weekly essays is devoted to the art-critic, and his spontaneous humor is seen in the following two paragraphs:

"I do not subscribe to the common argument that a man is not justified in criticizing anything until he can produce something better himself. I may be a good judge of cigars without knowing anything about the cultivation of cabbages, and the conversion of their leaves into choice Havanas. I can legitimately grumble at stodgy plum-duff, though I cannot distinguish between a rolling-pin and a nutmeg-grater. Similarly, I hold that a man may be a good judge of photographs and not know a lens from a lentil. I am a whale at finding faults in prints; I can locate more faults to the square inch than any man breathing; but I can no more make a passable print than I can lift myself off the ground by my long ears.

"The chief requisite for the photographic critic is not ability, but cheek. He must get a pedestal as high as the Nelson column, and declare that it is too short for him. Also he must possess a particular kind of nerve. He may be such a coward that when he is tossed into the air by a bull he is afraid to come down; yet he must be prepared to stand up to a multiple-medaled photographer and tell him to his face that, without exception, his choicest masterpieces are unmitigated rubbish. It is the foundation of the art-critic's creed that he must adopt an uncompromisingly hostile attitude toward photography in all its forms and phases, and he must premise that art does not and cannot enter into it in any shape or form, whatever."

Camera-Fiend Has Close Call

The amateur "camera-bug" almost landed in jail Thursday. He carried a small Kodak in his hip-pocket, and when he appeared in police court, and sat down in a hard-seat chair, the Kodak struck audibly. Several patrolmen heard the suspicious sound and promptly jumped to the conclusion that anything of a hard substance in a man's hip-pocket must be a concealed weapon. They trailed the camera-fiend to the corridor, where explanations resulted in a laugh, and the officers posing before the "bug's" Kodak.

Evening-News, Detroit.

Aside from the fact that, in this instance, the pot called the kettle black, the camerist in question had a lucky escape. How different might have been the ending had he reached for the Kodak in its accustomed place (his hip-pocket) in an attempt to snapshoot a couple of brawlers in a western saloon. He might now be in the Elysian Fields, busily engaged in making celestial snapshots.

Where Photographs Are Detrimental

Not long ago a prominent photo-pictorialist, wishing to requite a kindness, presented to a friend two good-sized framed enlargements, of a pictorial character, with which to relieve the bareness of the walls of his apothecary-shop. The walls — right and left, as one enters — are tinted in a beautiful gray, and nothing is allowed to encroach upon their simple dignity. Below, to a height of about eight feet from the floor of this high-studded apartment, and extending the entire length of it, are mahogany display-cabinets and shelves filled with specialties, and in front of these the usual show-cases and counters. The wares displayed are of the choicest kind, and everything reflects the refined taste of the proprietor.

Some time afterwards the amateur visited the store to note the effect of his pictures, and found that the walls were still bare. But his friend, the proprietor, explained by saying that he did not see how he could alter the character of the scheme of fitting up his store, which was simplicity and harmony.

"You see," he continued, "your magnificent pictures would make an adorable effect, one on each wall. My customers would gaze on them in admiration; but I want them to concentrate all their attention on the goods in the show-cases, on which I have spent considerable thought and expense."

After a somewhat embarrassing pause the two friends effected a compromise, mutually agreeable, and now the two enlarged landscapes decorate the hall of the apothecary's seaside-home.

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

Photographic Section, Portland Society of Art

THE annual exhibition of photographs by the Photographic Section of the Portland Society of Art was held in the galleries of the Sweat Memorial Art Museum, Portland, Me., from March 2 to March 27.

While it is perhaps difficult to compare exhibitions of different years, still it is the opinion of most of those who have seen this year's showing that the standard was the highest of any which has been held since the Portland Camera Club became associated with the Art Museum, four years ago.

A great part of the work exhibited seemed to be the product of the soft-focus lens, yet these lenses were used with moderation, there being a tendency to suppress detail without losing all sense of line and modeling.

The exhibition, so far as processes are concerned, was very well balanced, gum, oil, platinum, bromide and gaslight paper being represented. Perhaps the most striking of the pictures were the multiple gums by Dr. Rupert S. Lovejoy, which were beautiful examples of the possibilities of this process. His "Close of Day," a fine orange and yellow sunset-picture, attracted a great deal of favorable comment.

Another noticeable feature of the exhibition was the evident care used in selecting the medium or paper to produce properly the effect desired. This was well shown in two snow-scenes, which were hung side by side. One, by Francis O. Libby, a cold-gray bromide, illustrated the bleakness of the winter's day; the other, by Frank H. Faught, showed the sunlight streaming through the forest in the late afternoon, the yellow-toned print depicting with startling reality the yellow winter-sunshine.

As usual, the Portland Camera Club had several surf- and marine-views, in which work they have always excelled. Among the best of these were Arthur P. Howard's "Thunder Cliff," C. M. Jaquith's "Surf, Back Shore Peak's Island," Frank Laing's "Breaking Away" and H. F. Noyes's "Rolling In." The skies and the tone-values in the water and surf were specially well handled in these pictures.

A very interesting development of the work of the local men was the use of the figure in the landscape. Good examples of this were William T. Starr's "Going to Market," Carl A. Jordan's "Feeding-Hour," and "Plowing," by H. A. Latimer. In this connection may be mentioned the interesting genre-studies by George H. Hodgkins. His picture "Hoisting the Sail" was a typical scene along the water-front.

The work of the exhibitors from outside the Portland Camera Club was well up to the standard of former years, although some familiar names were absent. William B. Carter had a delicate and soft-toned "Winter-Sunset," while among the pictures of Dwight A. Davis the one entitled "Among the Flowers" exhibited the possibilities of the soft-focus lens in portraying the glorious summer-sunshine.

Irving Kimball's set of portrait-studies evidenced originality of pose and accessories, and B. J. Morris had a striking character-study of John Hageman.

The Chicago Photo-Fellows were well represented — indeed, the annual exhibition of the Portland Camera Club has always contained representative work from this organization. As usual, it was distinctive and extremely artistic. Special mention might be made of C. W. Christiansen, who sent three pictures, two of which were decorative studies, showing careful composition and good treatment of the background.

The work contributed by the Bangor Photocraft was diversified in subject and process. The portrait of Dr. Humphrey, by George L. Francis, was a fine example of the work of that club.

Taking the exhibition as a whole, it might not satisfy entirely either the realist or the impressionist; but perhaps that, in itself, is the best praise for the show.

Economical Coating for Blue-Print Paper

As a result of the great increase in the price of potassium ferricyanide, or red prussiate of potash, which is extensively used as a coating-material for blue-print paper, an economical method of preparing the substance has been devised by the Department of Agriculture. Before the beginning of the war, potassium ferricyanide could be obtained for 55 cents a pound. It now sells for about $6 a pound, and, moreover, it is exceedingly difficult to obtain in this country, even at that price. Since blue-print papers in this country are coated almost exclusively with potassium ferricyanide, and all mechanical equipment for its preparation and use is built for this as the coating-material, the rise in price has worked quite a hardship upon both the producers and users of blue-print paper.

Potassium ferricyanide is produced by oxidizing a solution of potassium ferrocyanide with chlorine gas. At the same time a small amount of potassium chloride is produced. Investigations by the Bureau of Chemistry show, however, that the presence of this amount of potassium chloride in the coating of the paper does not interfere with the color and durability of the print. It is unnecessary, therefore, to separate the potassium chloride by crystallizing the potassium ferricyanide, provided that the latter is to be used on the spot and soon after it is prepared.

The apparatus devised by the Bureau of Chemistry for preparing in this way potassium ferricyanide solution is simple. At the prevailing prices of the materials, potassium ferricyanide solution can be made by this process at a cost of approximately $2.80 per pound, calculated on the dry-salt basis. At the prices which prevailed before the war, and which may be regarded as normal, the cost would be approximately 35 cents per pound.

Allowing for possible loss, 100 pounds of potassium ferrocyanide should yield about 75 pounds of potassium ferricyanide. Probably 10 pounds of chlorine would be required also. That is, 1⅓ pounds of potassium ferrocyanide oxidized with approximately ⅛ pound of chlorine would yield 1 pound of potassium ferricyanide.

In February potassium ferrocyanide was quoted at $2 per pound, and liquid chlorine can be obtained in iron cylinders for 15 cents a pound. At these prices, as has already been said, a pound of potassium ferricyanide in solution can be made for approximately $2.80 per pound, whereas it is now quoted on the market at $6 a pound.

This saving is, of course, much greater than under normal conditions, when technical potassium ferrocyanide can be obtained for 25 cents per pound and technical potassium ferricyanide for 55 cents per pound. The price of the potassium ferricyanide at all times will be greater than the price of potassium ferrocyanide, since the former is prepared by oxidizing the latter with chlorine, followed by repeated crystallizations to separate the potassium chloride formed at the same time — an unnecessary refinement in blue-print coating. It seems probable, therefore, that even under normal conditions the simple procedure devised by the Department of Agriculture for the preparation of potassium ferricyanide solution will prove profitable for users of large quantities of blue-prints.

A complete description of the apparatus and its use, together with a blue-print diagram, may be had upon application to the Office of Information, U. S. Department of Agriculture, Washington, D. C.

The Hurter & Driffield Memorial

THE Royal Photographic Society of Great Britain is making plans for some sort of permanent memorial commemorative of the invaluable services of Messrs. Hurter & Driffield, who laid the foundation of all modern scientific photography, and to whom is due the discovery of the rapid dryplate of the present day. Probably it will take the form of a reprint of all the articles published by these eminent investigators, together with explanatory notes and comment by the highest authorities of to-day; also an annual lecture to be delivered in their honor and published in the photographic press.

The following committee, appointed by the council of the R. P. S., has the matter in charge: Sir W. de W. Abney; Major-General J. Waterhouse; George E. Brown, editor of *The British Journal of Photography;* F. F. Renwick, secretary; W. B. Ferguson, treasurer. Subscriptions to any extent, and no matter how small, will be received gladly, and should be sent to the American Auxiliary Treasurer, Mr. E. J. Wall, F.R.P.S., Syracuse University, Syracuse, N. Y. Mr. Wall announces that the Eastman Kodak Company has promised $1,000.

More 3A Kodak Data

FOR the benefit of those who have found useful information in Mr. Franklin H. Smith's article, "Speed- and Exposure-Tables for a 3A Kodak," in PHOTO-ERA for February, the following further explanatory information may be of interest. It refers to Plate I, on page 73.

B blur.

E circle of confusion for an object located at "N."

J circle of confusion for an object located at "K."

R blur plus circle of confusion for an object located at "N."

Q blur plus circle of confusion for an object located at "K."

Note that "R" in equation (1) and "Q" in equation (3) are usually assumed as $\frac{1}{100}$, $\frac{1}{200}$, etc.

Platinum Discovered in Spain

PLATINUM is a scarce commodity nowadays, and every report of the discovery of a new supply is cheering news. The latest comes from the mountains near Ronda, Spain. The Spanish Government is said to have taken possession of the ground, and the work of developing the mine will be carried on under the direction of the Geological Institute.

EVERYTHING requires study.—*Alfred Stevens.*

A Boon to Professional Photographers

IT is true that the transmission of photographs is restricted to third-class mail — at the rate of two ounces for one cent — but this refers to packages up to four pounds in weight. As explained elsewhere in this issue, when the weight of the package exceeds four pounds it goes by parcel-post, and right here is where the professional photographer, who frequently sends off heavy packages of prints, can save considerable money during the year. The economy is noticeable particularly in his own postal district, where a package weighing five pounds may be sent to any point for only seven cents! Packages *must weigh over 4 pounds to be accepted by the government as parcel-post,* and suitable material, such as heavy strawboard or rough wooden boards, may be used to make the packages weigh the required amount.

For the benefit of professional workers we have prepared from official data the following table:

5 pounds for 7 cents in local zone (local postal district).
Each additional 2 pounds, 1 cent.

5 pounds for 9 cents in first zone, 1–50 miles.
Each additional pound, 1 cent.

5 pounds for 9 cents in second zone, 50–150 miles.
Each additional pound, 1 cent.

5 pounds for 14 cents in third zone, 150–300 miles.
Each additional pound, 2 cents.

5 pounds for 23 cents in fourth zone, 300–600 miles.
Each additional pound, 4 cents.

5 pounds for 32 cents in fifth zone, 600–1,000 miles.
Each additional pound, 6 cents.

5 pounds for 41 cents in sixth zone, 1,000–1,400 miles.
Each additional pound, 8 cents.

5 pounds for 51 cents in seventh zone, 1,400–1,800 miles.
Each additional pound, 10 cents.

5 pounds for 60 cents in eighth zone, over 1,800 miles.
Each additional pound, 12 cents.

Insurance of Fourth-Class Mail or Parcel-Post

Fees and conditions.— Fourth-class or domestic parcel-post mail (but no other) may be insured against loss, rifling and irreparable damage upon payment of a fee of 3 cents for value not exceeding $5, or 5 cents for value not exceeding $25, or 10 cents for value not exceeding $50, or 25 cents for value not exceeding $100, in addition to the postage, both to be prepaid with stamps affixed. It may not be registered.

Such mail may be insured at any post-office or station thereof, or by rural carriers. The sender must fill out an insurance-tag, which will be furnished him on request, to be attached to the parcel.

Return-receipts for insured parcels may be obtained by endorsing the parcels "Return-receipt desired."

Indemnity for lost insured parcels is paid for the actual value within the limit of insurance. No indemnity is payable on account of mere partial damage. However, when an article or any separate part thereof is so damaged as to render it wholly worthless, it is regarded as lost, provided it was packed and endorsed in accordance with the postal requirements. No indemnity is paid for labor, workmanship, etc., in repairing partial damage. Claims for indemnity must be filed within six months from date of mailing.

An Omission

IN mentioning the prizes awarded in the 1915 Kodak Advertising-Contest, the name of Mr. William Shewell Ellis, of Philadelphia, was unintentionally omitted. He won the highest prize, of $500, paid for the best new slogan with a photograph illustrating it. This was Class VI, and only one prize was offered.

Don Scott

While in Boston in February, Mr. Don Scott, the popular instructor of the Eastman Professional School, caught a severe cold, which later developed into pneumonia, of which he died in Indianapolis April 4. He was buried at his old home, Friendship, N. Y. His death deprives the Eastman School of one of its most able demonstrators and the photographic profession of a much esteemed man. Mr. Scott is survived by his wife and mother.

Howard Magill Phillips

It is with the utmost regret that we record the death of Howard Magill Phillips, on March 31, of acute pneumonia. Only forty-eight years old, and in the prime of life, he was associated with his brother, Ryland W. Phillips, in the Phillips Studio, 1507 Walnut Street, Philadelphia. Although his efforts were directed chiefly to the business end of the studio, as a result of which his clientele included many prominent persons, he was an adept photographer, and his death will be rightly regarded as a distinct loss to the profession.

Gustavus A. Brandt

It is our sad duty to announce the death, at his home in Washington, D. C., of Gustavus A. Brandt, since 1899 secretary and the very life of The Postal Photographic Club, and one of the best known and most widely loved amateur photographers. He died of pneumonia, March 17, and was buried according to the ritual of the G. A. R., having served his country in the Civil War and occupied a position in the office of the Adjutant General of the U. S. Army from 1864 until the time of his death. A man of rare personal qualities and superior attainments, his life was ennobled by a knowledge of good literature, music and art. His punctuality was characteristic; indeed, the regularity with which the club albums were issued established a record which will always be remembered for its sacrifice of personal ease that the club might be efficiently served. A touching instance of his fidelity was shown by his anxiety during his last illness for the issuing of the April album on time.

No Limit

The Eastman Kodak Company issues a bulletin warning producers of photographic supplies to husband their material with the utmost economy. Chemicals and other products necessary to this industry, because of the enormous demand for them in other directions, created by the war, are rapidly getting beyond reach — in price and quantity obtainable.

Here is one more instance of the alarming effect upon many industries in this country produced by European markets where uncontrolled extortion is now allowed free play. What is to become of American manufacturers if they have to buy the commonest materials at prices constantly advanced by the feverish demands of war?

Take the ordinary metals used in a thousand ways. Copper ought to be 16 cents a pound. But since Europe will now pay from 27 to 29 cents for it, manufacturers in this country who have to have copper are expected to accept the higher figures as the market price. Zinc is one of the commonest metals. Yet it is selling around 30 cents a pound, three times its usual cost. Even the humble lead has increased in price more than 50 percent.

Again, the price of common, everyday blotting-paper has gone up amazingly. Why? Because blotting-paper is made from cotton-rags, and the Du Pont Powder Company is bidding for all the cotton-rags in sight at 9 cents per pound.

These soaring war-prices may mean profit for the few. But what about the many for whom they mean only that ordinary articles cost more and more because the prices of materials essential to their production are boosted ever higher?

Holland, facing a similar problem, has attempted, at least, to solve it.

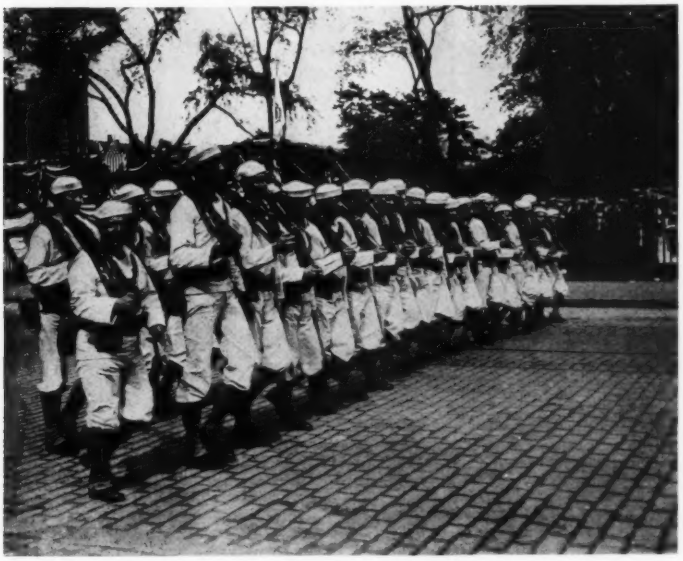
The Dutch Government allows Dutch producers and manufacturers to dispose of 40 percent of their products to foreign customers at any price they can get. The remaining 60 percent must be sold at home at standard prices.

The United States cannot afford to ignore injustice either to its industries or to its millions of consumers.

It is the desperate demand of Europe against the healthy demand of this country. It is the extravagance of colossal destruction against the normal needs and resources of thrifty producers.

Is there to be no protection for the latter?

Bulletin of Photography.



READY FOR THE CALL — W. F. TURNER, JR.

LONDON LETTER

CARINE AND WILL A. CADBY

ALL the early part of this month the conditions for photography have been most abnormal. Those snow-photography enthusiasts who go to Switzerland for inspiration have had a wonderful chance to find their subjects at home. Snowstorms have been raging while the thermometer has kept exceptionally low for the time of year, so that not only was everything covered thickly, but remained so for days. Naturally, our illustrated press has given us plenty of snow-scenes; but, alas! for our printing-processes — the snow is rarely depicted as white. The titles, however, save the situation and tell the tale. For instance, were it not for the heading, "Wounded Soldiers Snowballing," we might have thought they were pelting each other with balls of mud.

In the photographic world there are already signs that there is a better time coming for us all, and there has been a breaking-out into social functions. The Press Photographers' Association gave a party in Fleet Street — where else could its members have found such a suitable and historic spot for their rendezvous? Some interesting experiences were related by those who had come recently from the front, and a wallet was presented to Mr. Sturdee, a relation of our admiral of the same name.

Shortly after this, the Royal Photographic Society gave a luncheon, which, in spite of the awful weather-conditions, was well attended and a distinct success. To most people's great regret Mr. Furley Lewis's year of presidency is over. This office is not an easy one to fill, these war-years, and it was a stroke of luck for the society that it got such a popular individual to fill it.

The new president is Mr. John H. Gear, who is, perhaps, our greatest expert in technical photography. He understands every process under the sun, but seems to be known best as the master of the oil and bromoil-processes.

Last week yet another luncheon was given by the Photographic Convention of the United Kingdom. Evidently the conventioners missed their annual meetings, which used to take place every summer and last a week. Many of the beauty spots of our own and neighboring countries were visited by the delegates to the convention, and it used to be a delightful holiday, for picnics, outings and evening-entertainments were sandwiched in between the lectures and photography in a most satisfactory manner. For the first time in thirty years, no meeting was arranged last June, and this luncheon was probably the outcome of a wish of the members to forgather once more and keep in touch until better times come again.

The Camera Club is continuing its lectures. "The Berner Oberland," by Mr. George Rodman, is, however, a rather tantalizing one. Why should we be shown such attractive pictures, when it is virtually impossible for English people to visit Switzerland? On hearing this complaint one of the Camera Club members remarked that we must look on it as the nearest thing we shall get to the Alps till the war is over.

The present exhibition at the Camera Club is held by Mr. Tilney, the well-known art-critic. Having seen some excellent multiple oil-prints in color by Mr. Tilney, some years ago, we went to the Camera Club imagining that we were to see photographs, and were rather disappointed to find that Mr. Tilney was exhibiting his oil-paintings. One need hardly say that our disappointment had nothing to do with Mr. Tilney's work, only the experience was a little like the well-known one of expecting tea and drinking coffee! The show was barely open and the catalogs were not yet out, so we cannot name the picture which pleased us most; but it was a sympathetic little snow-scene — perhaps our photographic eyes understood it better than the more vivid sunset-effects of which Mr. Tilney had a whole panel. As critics, we all have a great respect for Mr. Tilney, even when we do not see quite eye to eye with him; for he is fair, honest and very trenchant.

Hammersmith is not a very attractive suburb of London, but many of us will be visiting it this month to see Mr. A. L. Coburn's one-man show of photographs. If anything could tempt one to go in for the photogravure process, it would be Mr. Coburn's examples. It means labor, time, and many difficulties, but seems so well worth it when one sees what Mr. Coburn achieves.

SOLDIERS IN THE MAKING

The present is certainly the day of the small camera, especially for those in either of the services. The big prizes offered by our press for thrilling snapshots have stimulated the buying of apparatus that actually will go into a pocket, and which may bring its owner fame as well as a substantial sum.

A near relative of ours who commands a merchant ship on government service enjoyed special opportunities to get exceptional snapshots of the war. He was returning from the East, not only with a valuable cargo, but with rolls of exposed film valuable to him, but probably a good deal more so to the enemy. His vessel was torpedoed off Tripoli, and the ship's com-

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pany, in its two small boats, was ordered to come alongside the submarine, and our captain, after seeing his good ship sent to the bottom, had the additional trial to witness all his personal belongings, amongst which was the little camera, being taken aboard the submarine. He tells us that the grief at the loss of his ship was naturally his all-absorbing feeling; yet the sight of his photographic apparatus being handled familiarly by the enemy caused for the moment the sharper pang. But even this grim situation had its touch of humor, for the tell-tale rolls of film had been destroyed the moment the submarine appeared.

Last Sunday our village-grocer called, and, after a good deal of beating about the bush, disclosed his errand. He is in the Volunteer Training-Corps for men above military age. His eldest son, nineteen years, has already been in training for the line for eight months, and was home for his forty-eight hours leave before being drafted to France. His second boy is working hard to become a soldier in his cadet-corps at school. They would all be separated on the morrow — would we take their photographs? They might never be all together again. Who could refuse? Plates were soon exposed, and the illustration we give from one of them is just a simple photographic historical record in miniature of the transformation of England. In August, 1914, our grocer was rapidly becoming a rather stout, middle-aged, peace-loving citizen, engrossed in his business and in the education of his sons for mercantile careers. The eldest boy was already at work in a London warehouse, and the little one's chief interests were football and cricket. Now they are all soldiers in the making, with a very considerable amount of military education already absorbed. So it is all over England.

Royal Photographic Society

THE sixty-first annual exhibition will be held as in the past during the months of August and September. Mr. C. E. Kenneth Mees has again been appointed one of the judges in the Scientific Section in order to facilitate the collection of American exhibits and to forward them to London, thus relieving the maker of all difficulty and expense. Those wishing to be represented should communicate with Mr. Mees, care of the Eastman Kodak Company, Rochester, N. Y., who will gladly forward an entry-blank.

For several years the American exhibit in the Scientific Section has been a comprehensive one and of much interest to English workers as showing what has been accomplished on this side of the Atlantic; and it is earnestly desired by the Council of the R. P. S. that the United States continue to be fully represented in this exhibition.

1916 Kodak Advertising-Competition

THE backbone of the national advertising of the Eastman Kodak Company is now based on photographs received through the annual competition, which has now become a permanent feature of the campaign. These pictures are not necessarily photographs made with Kodaks, but pictures showing Kodaks and Brownies in action, and suggesting the many and diverse delights of amateur photography.

As usual, the prizes are well worth while, ten in all, ranging from $100 to $1,000 each, and totaling $3,000 in cash. Indirectly this competition is also beneficial as a training in photography for advertising-purposes — a field which is growing rapidly.

Complete particulars and entry-blanks will be supplied on application to the Advertising Department, Eastman Kodak Company, Rochester, N. Y.

BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices. Send for our list of approved books.

THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC, 1916. Edited by George E. Brown, F. I. C. Numerous illustrations. Price, 50 cents; cloth, $1; postage extra, according to zone. New York, U. S. A.: George Murphy, Inc., 57 East Ninth Street, general sales-agent.

The appearance of this useful handbook, the bible of photography, is especially welcome at this time, when we are beginning to realize more fully than ever before the many difficulties which must stand in the way of its production. Surely we can but admire the courage and determination of the publishers to continue this voluminous annual despite the war. True, it has lost something of its familiar bulk; but that is confined almost entirely to the advertising-pages, which have very naturally suffered through the loss of much foreign patronage and the necessity to curtail space on the part of certain British manufacturers.

The text includes the usual grist of formulæ, standard tabular matter and the Epitome of Progress, with its quotations from most of the leading photo-journals of the world. Instead of the review of novelties in apparatus — there being virtually none — 52 pages have been devoted to a summary by individual firms of the British resources in the manufacture of photographic materials and apparatus. And it is, indeed, a formidable array covering virtually every department of this many-sided industry. As usual, however, the principal feature consists of a comprehensive article by the editor, being devoted, this year, to a detailed review of all the photographic printing-processes, materials for which are now on the market.

Metol Substitutes

IT is but natural that the great scarcity of Metol, and exorbitant price when obtainable, has led to the introduction of Metol substitutes in one form or another. No doubt there are concerns and individuals who are taking unfair advantage of this unfortunate situation by selling compounds that are very inferior and no substitutes for Metol at all. Fortunately, of such meretricious products we have little or no knowledge, for the reason that, knowing PHOTO-ERA'S determined stand against all schemes of a doubtful character, the producers or agents of Metol substitutes who have approached us are entirely reliable, and PHOTO-ERA readers will make no mistake to patronize them if in need of substitutes for Metol or other important photo-chemicals. Thus we can recommend well-known chemical firms, including Merck & Co. (Photol), Berlin Aniline Works (Metol substitute) and Du Pont Powder Company and the Abbott Alkaloidal Co. (hydrochinon). Another reputable firm (as advertised in this issue) is selling original Hauff developers and other chemicals. For firms or products other than these the Publisher of PHOTO-ERA assumes no responsibility, but will be glad to investigate any question along this line that may be brought to his notice.

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WITH THE TRADE

A New Cooper Hewitt Pamphlet

THE article "Portrait-Lighting with Mercury-Vapor Lamps," by the Gerhard Sisters, which provided the cover and leading feature of the January issue of PHOTO-ERA, has been reprinted in pamphlet form by the Cooper Hewitt Electric Co., Hoboken, N. J. And a very attractive job they have made of it; certainly it should go a long way toward convincing professional workers of the practical value of this wonderful type of lamp in the studio. Copies of this pamphlet may be had by those interested upon request.

Here is a New One

CHARLES G. WILLOUGHBY, one of the most enterprising and up-to-date photo-supply dealers in the business, announces that his is the first photographic house in New York City to inaugurate an automobile delivery-service. The idea is one to command the serious consideration of progressive dealers in other large cities where this sort of active coöperation with studio and commercial photographers doing a large business will be appreciated.

The Harvey Exposure-Meter

A NEW list of plate-speeds has just been issued for this meter, and the number of plates and films included will be further increased from time to time. Although the H & D numbers vary somewhat from those of other lists they will be found to work well with the Harvey meter. Since it was first brought out this device has been adapted to use with motion-picture cameras, thus greatly broadening its sphere of usefulness.

An Incident in Price-Raising

IF there is a photo-supply dealer who has had little or no experience in raising or lowering (cutting) prices, let him read the following incident, which illustrates this phase in any mercantile business.

A certain retail dealer in gasolene, doing business in the suburbs of Boston, always keeps his price of gasolene one cent below that of his competitor, on the same street. One day last March the higher-priced dealer advanced his price from 24 cents to 25 cents per gallon. His rival, knowing of this advance, was about to raise his price to 24 cents, when one of his customers, a shrewd business-man, advised him to stick to 23 cents, which was done. The result was that the business of the higher-priced dealer at once began to drop off. Greatly alarmed, he quickly put the price back to 24 cents; but of no avail — his customers did not return. They liked the fair-minded policy of his competitor.

The price of gasolene has advanced since then, and continues to soar. The two rivals are still, as before, one cent apart; but the "get-rich-quick" dealer refuses to come down to the price of his conservative rival. If he did so, it is more than likely that his competitor would at once recede by one cent, for it is the latter's purpose always to be one cent behind his rival.

This interesting competition should be noted by some of our photo-supply dealers. They might not wish to emulate the example of either one of these two gasolene dealers, but come to a business-like understanding and maintain a uniform price on every photographic commodity.

Bromide Enlargement Frauds

THE privilege to be swindled is the undisputed right of every free-born American citizen. Some people find a certain degree of satisfaction in the exercise of the right, hence the innumerable schemes to defraud the public. One of these is the popular offer, "Films Developed Free," or "A Bromide Enlargement Free." This class of advertisements is rigidly excluded from PHOTO-ERA.

An offer of this kind consists of supplying, entirely free, an 8 x 10 bromide enlargement. The advertiser then explains that for the sum of one dollar he will furnish a hand-colored 8 x 10 enlargement from your negative. The enlargement is *free*; but the dollar pays for the coloring of it. As a matter of fact, the coloring is so poor as to be scarcely worth even 10 cents, and the shrewd purveyor clears 90 cents profit for an enlargement that any first-class house will supply for fifty cents!

One dollar, however, is a fair price for a soft-focus enlargement made from your negative by the Pinkham & Smith Co., Boston, Mass., as advertised in this issue; for the Publisher has seen some admirable work of this sort done by this thoroughly reliable firm.

G. Gennert in the Motion-Picture Field

A CATALOG of motion-picture apparatus has just been issued by G. Gennert, 24 East 13th St., New York City, which contains information of value to every prospective purchaser, and may be had on request. This department of the Gennert business has become quite extensive, and now includes a very complete line of cameras, projectors, machinery and sundries required for the studio, exchange and manufacturer.

The Wollensak Catalog

THE 1916-17 catalog of lenses and shutters recently issued deserves the careful perusal of every camerist contemplating the purchase of a lens or shutter. Most PHOTO-ERA readers know what Wollensak quality infers, and the line of goods manufactured by this firm is so diversified that almost any requirement of the amateur or professional worker has been anticipated and met. The booklet is handsomely conceived and executed and so appeals to the eye as well as to reason.

A High-Class Photo-School

STUDENTS in photography eager to acquire practical knowledge in artistic composition and expression should get in touch with Clarence H. White, the distinguished master-photographer. He has courses for winter and summer, and his patrons include both amateur and professional workers, many of whom are prominent portraitists. Photographers desirous to improve their work should communicate with Mr. White, for they will find his ideals inspiring and adapted to modern needs.

His Costly Mistake

"WHAT ruined your business?"
"Advertising."
"How?"
"I let it all be done by my competitors."
Boston Evening Transcript.